New Orleans Medical
and
Surgical Journal

Vol. 79 NOVEMBER, 1926 No. 5

DYSCRASIAS OF THE BLOOD.*

WILLIAM J. MAYO, M. D.,
ROCHESTER, MINNESOTA.

"Picturesque dyscrasia" is a perfectly good term, although in the vocabulary of pathology it belongs chronologically with "humor", and suggests how little we have known, except in a general way, of the blood plasma, the fluid in which float the microscopically visible cellular elements of the blood. The blood plasma lies in the ultramicroscopic field of which we have only of late, through physico-chemical means, acquired reliable knowledge.

It is my purpose to discuss briefly certain fundamental changes in the blood plasma due to the excessive accumulation of catabolic substances, the result of normal as well as of abnormal metabolism, which must be eliminated from the body. The chemical processes of man, like those of the lower animals, depend on an alkalinity of the fluids of the body so slight that it is difficult to give a scientific formula for them. The difference between the neutrality and the alkalinity of the body fluids is comparable to the difference between the neutrality of distilled water and the alkalinity of tap water. As a condition of the latter comparison, the distilled water must be fresh and not exposed to the air, from which it readily absorbs sufficient carbon dioxid to give it a slight acid reaction. We speak of acidosis as though the body becomes acid, but this does not occur. Acidosis is simply a reduction of the normal slight alkalinity of the body fluids which, during life, is never entirely overcome. So far as I know, no gland in the body secretes an acid. One thinks of the hydrochloric acid of the gastric juice, but, as shown by Carlson and others, this hydrochloric acid is not a true secretion. The chemical materials from which the acid is formed are brought together on the surface of the acini of the glands. The acidity of the contents of the large intestine is due to acid-forming bacteria in ingested food material; the normal secretions of the large intestine are alkalin. In the body the exchange of electrons in the atom which alters the composition of the molecule takes place only in alkalin saline solution.

We have inherited from our ancestors of the sea the need for sodium chlorid and a trace of iodin, both necessary for those chemical changes on which vital energy depends. Both sodium chlorid and iodin are very soluble in water, and in certain regions of various countries subject to heavy rainfall have been completely washed from the soil. It is interesting to note that the brown discolorations on crude rock-salt are due to iodin. That iodin is necessary to the healthful growth of cattle was proved when the attempt was made, with deleterious effect, to replace the crude salt in their diet with refined salt which contained no iodin. The relation of iodin to health has been so thoroughly worked out by Kendall in his

*Read before the Louisiana State Medical Society, Monroe, April 15-17th, 1926.

discovery of thyroxin that there is no need to comment further upon it.

By a study of the excretory functions of the body one can obtain a fairly clear idea of nature's methods whereby the normal condition of the blood is maintained. Of the excretory functions of the body, the urinary, the intestinal, and the biliary functions are three of the most important. As might be expected, any interference with the elimination of catabolic substances which prolongs their retention in the blood leads to serious changes in the blood plasma. In many respects the changes resulting from interference with elimination are similar, although the seat of obstruction may vary. In a general way, the alkali-acid balance undergoes change. The carbon dioxid combining-power goes up, with manifestations of alkalosis, or down, with acidosis, the chlorid concentration of the blood is disturbed, and nitrogenous products, urea and creatinin, are formed, or retained, in excess. In all these manifestations dehydration or edema, anemia, and inability to metabolize food properly very soon become apparent.

INTERFERENCE WITH RENAL FUNCTION.

If there is a sixth sense, it must be that form of intuition which we call scientific imagination, the building of images based on known facts from which deductions can be made, and on experimental data from which equally important inductions can be drawn and with which new images can be formed. This remarkable mental quality is well shown in the contributions of Bright, who in 1828, working with little more than reagents, mainly nitric acid, gave a lucid description of acute nephritis and edema, a candle, a tablespoon, and a few chemical its effect on urinary excretion. Ten years later he gave an equally lucid description of chronic granular kidney and the condition which we know today as the cardio-renal complex, and the effect of this disease on urinary excretion.

The function of the kidney can be briefly described as filtration of non-threshold bodies, such as the products of nitrogenous metabolism, of which urea is the most important, and the elimination of excess chlorids and water. According to Cushny, this process of filtration and elimination takes place through the glomeruli with reabsorption of threshold bodies through the tubules. Threshold bodies are those substances, like sugar, which are normally to be found in the blood and which, only when in excess of a certain concentration, flow over and are excreted with the urine. In acute toxic conditions, for instance scarlatina, the filtration function of the kidney is greatly retarded, and the chlorids and excess water in the blood are deposited in the tissues, especially in the cellular spaces, giving rise to edema.

In certain forms of chronic nephritis in which the kidney is granular and contracted, the water and the chlorids are eliminated readily, but there is interference with the filtration of the non-threshold body, urea, which is always present in the blood and urine. The amount of urea in the blood is consequently increased. The specific gravity of the urine becomes low, since the kidneys are unable to concentrate the urine normally, and an increased amount of urinary fluids is necessary in order to eliminate the urea and other molecular metabolites. The cause of these phenomena is toxic agents filtered from the blood stream which act on the renal tissues and blood vessels, especially the glomeruli.

The term nephrosis, an unhappy one, has been given to toxic degenerations affecting the renal tubules, characterized by albuminuria, with or without edema, and without retention of urea or increase in blood pressure.

These forms of renal disease are not necessarily connected with infections, but, given interference with urinary drainage, such as stricture of the urethra or ureters, stones, or prostatic enlargement, the stage is set for most serious dyscrasias which require surgical treatment. Cabot points out

that an infected catheter introduced into a normal bladder will not cause infection, but that when interference with drainage exists, resulting in retention, infection promptly takes place. When some form of nephritis is already in existence, the manifestations resulting from interference with drainage develop rapidly, and death ensues quickly. If the kidneys are normal and the interference with drainage develops slowly, the dyscrasia is sometimes so insidious as to escape recognition until a late stage. The blood urea, a catabolite of protein origin, derived usually from tissue and deposit proteins rather than from those in the food, gradually rises from a normal of 26 mg. for each 100 cc. of blood to a high point, perhaps 300 mg. or more, the creatinin rises from a normal of 2 mg. in each 100 cc. of blood to 10 mg. or more; the action of the heart becomes weak, and the patient develops anemia and general prostration ending in death.

Formerly hyperdistention of the bladder, produced by slowly increasing retention of urine and causing a palpable suprapubic tumor, was suddenly relieved by the catheter; the frequent results were fulminating infections, hemorrhage into the bladder, and death from acute uremia. Today hyperdistention of the bladder is relieved by emptying the bladder slowly under counterpressure in the course of a week. The excess urea is eliminated by large quantities of normal solution of sodium chlorid, best given intravenously, a liter two or three times a day. In addition, a proper diet containing digestible carbohydrates particularly, aided if necessary by the intravenous injection of 10 per cent solution of glucose, as advised by Matas, will, in two weeks, put even desperately ill patients in condition for successful surgical operation, such as prostatectomy, for the correction of the interference with urinary drainage.

The remarkable results which have been brought about in the surgical treatment of mechanical disturbances of the urinary function as the result of the investigations of Braasch, Bumpus, and Crenshaw, and the extraordinary reduction in mortality following operations for enlarged prostate, shown by Hunt and Walters, are good examples of the application of physicochemistry to the human body. In 1925, Hunt and Walters performed prostatectomy in 213 consecutive cases with only three deaths.

INTERFERENCE WITH INTESTINAL FUNCTION.

The relation of physicochemistry to the dyscrasias which result from various forms of interference with the action of the intestinal tract can be dramatically illustrated by the treatment of the so-called high intestinal obstructions, whether the obstruction is mechanical or belongs to that class of phenomena, not well understood, called variously acute dilatation of the stomach and gastromesenteric ileus. In these conditions there is interference with the normal acid-producing mechanism of the body, with reduction of the amount of acid and a relative increase of alkalinity resulting in alkalosis. Alkalosis also often occurs following surgical operation and in the course of diseases, such as typhoid fever, which require medical treatment, and often, if not usually, causes death.

The heat and energy of the body are most commonly and cheaply produced by carbohydrates used as sugar in the form of glucose ($C_6H_{12}O_6$) and stored in the liver as glycogen ($C_6H_{10}O_5$), which is a chemically dehydrated form of glucose. Still further excess of glucose is converted into fat and deposited in various regions in the body as a reserve. The sugar is burned without ash and the carbon dioxid is passed off through the lungs. The fats contain a very small amount of oxygen, and consequently are slow to burn.

Protein is composed of carbon, hydrogen, oxygen, and nitrogen, with a little sulphur, the nitrogen being necessary to give form to the tissues and facilitate the deposition of other elements, such as calcium. From

58 to 60 per cent of ingested protein is convertible into sugar, but the nitrogen is not combustible and must be passed off, largely as urea. In alkalosis following high intestinal obstruction, the body proteins are broken down, with a resulting increase and retention of urea. When the blood urea goes above 125 mg. to each 100 cc. of blood, the condition of the patient becomes serious. The creatinin rises from the normal to 8 mg. or more for each 100 cc. of blood. There is also marked dehydration due largely to the vomiting which is so marked a feature. It must be borne in mind that 75 per cent of the body is composed of water or complex aqueous combinations and this reduction of body fluids seriously interferes with the chemistry of the body.

Haden and Orr, and Brown and his associates have pointed out that in high intestinal obstruction there is a steady decline of the blood chlorid from a normal between 560 and 650 mg. for each 100 cc. of blood to 300 mg. or less. Even more striking, as shown by the van Slyke method, is the gradual increase in the carbon dioxid combining-power of the blood plasma, from a normal of between 56 and 65 per cent by volume to above 100, and often to 150 or more. In many instances tetany results. In fourteen cases of tetany studied in the clinic, the lowest carbon dioxid combining-power was 88. In all the others it was above 100, and in one, 160.

While jejunostomy in a number of cases has proved to be a fairly reliable remedy in high intestinal obstruction of mechanical origin, the intravenous introduction, as advocated by Dixon, of large quantities of 1 per cent chlorid of sodium solution with 10 per cent glucose (a liter two or three times in twenty-four hours) will restore the blood chlorids in a surprisingly short time, and reduce the area. By furnishing glucose to maintain heat and energy, of which 75 per cent of the total is consumed in vegetative processes such as the action of the heart, lungs, and digestive tract, many patients may be restored to a condition which permits successful surgical operation.

Walters has shown, however, that alkalosis is not due alone to decrease of the blood chlorids. He was able in cases of high intestinal obstruction and of duodenal fistula to restore the blood chlorid by intravenous injections of concentrated solution of sodium chlorid, without relief of the alkalosis; he found too that water alone was of no value. Only with a 1 per cent solution of sodium chlorid did this form of intravenous therapy give the desired results. Eusterman, McVicar and Weir, by these methods of rehabilitation, have enabled Balfour to operate on 672 consecutive patients with serious disease of the stomach and duodenum with a mortality rate of 2 (2.08) per cent. 181 of these operations were resections, chiefly for carcinoma.

INTERFERENCE WITH BILIARY FUNCTION.

Bile in the intestinal tract is necessary to life. For a long time it was believed that bile was merely an excretion, but it has been proved that the absence of bile from the intestinal tract for long periods results in slow, progressive deterioration and death. Interference with the action of the biliary tract has been accurately studied in relation to the cholemic states, the result of biliary obstruction.

The circulation of bile in the blood, as in jaundice, permits the bile-acids and pigments to combine with the blood calcium. Within a few weeks, in susceptible persons, the combining power of the bile-acids and pigments is developed to such a point as to result in a dyscrasia which may lead to purpuric manifestations and frequently to the development of that slight reduction of alkalinity designated as acidosis.

The normal blood plasma contains prothrombin, which tends to clot, and antithrombin, which prevents the prothrombin from clotting. When blood is shed, the thromboplastin of the tissue juices unites with the antithrombin, and the soft clot of thrombin is the result. The blood platelets

are next deposited in the clot, and they make it more fibrous and cause it to contract. Later, calcium is deposited in the clot, and makes the thrombus permanent.

In the cholemic state, exhaustion of the blood calcium leads to failure of permanent clotting. The introduction intravenously of chlorid of calcium, in the average case, as shown by Walters, will promptly restore the blood to the normal state and permit operation to be performed safely for the relief of obstructive jaundice in patients who either would be looked on as unable to undergo operation or would die from hemorrhage or its results following operation. With proper methods of rehabilitation the death rate from this cause has been reduced to less than 1 per cent. A carbohydrate diet with large quantities of fluid to wash the bile out of the blood is necessary. Fluids may be given intravenously with glucose, if necessary.

If acidosis exists, a solution of bicarbonate of soda rather than of sodium chlorid should be used. In many cases transfusions of blood are needed in the process of rehabilitation.

DISCUSSION.

Dr. W. D. Haggard (Nashville): I think that the paper we have just listened to is more replete with sound physiological ideas than most any one I have heard in a long time. I believe that we are in the era of biochemistry and that our advances are going to be along the lines that have been indicated in the thesis. We have passed the pathological era; we have gotten the mechanical end of surgical practice highly perfected and crystallized, and now you will recognize that the trend of this paper is in the recognition of those states which militate against the life of the patient and even offers salvation by purely mechanical surgical means.

That is notoriously true of the enlarged prostate. You can recollect when the equally good surgery was done upon these desperately bad risks without proper preparation with enormous mortality, at times approximately fifty per cent. Now we recognize that it is no surgical anatomical sleight of hand maneuver at all that cures these people and saves them, but it is a recognition of their inhibitions, physiological inhibitions and a restoration of the status quo.

Now that is done by the prolonged preparation of these individuals. They are just on the narrow, delicate margin that they can scarcely go about, with a high nitrogen urea content, and an operation under those circumstances is fraught with very dangerous consequences. So the preparation of the patient and the recognition of his need for elimination and the measurement of his blood chemistry is extremely essential.

The utilization of fluids that would seem so fundamental we have long neglected, so that now the elderly man with enlarged prostrate, even if he allows himself to go to the condition of obstruction, which is not only vesicle but is secretory in the sense that the back pressure interferes with the secretion and therefore gives the patient an autointoxication that is miserable; so that with the modern operation for prostatectomy as so beautifully carried out by Hunt in the clinic where the whole thing is visualized and the patient is in a condition of physiological balance it is attended, therefore, with this very highly satisfactory mortality rate.

In dealing with the liver and its dysfunctions and insufficiencies, one must recognize too the importance of determining just what the liver is doing and particularly what it is not doing. In the jaundice state, which of course is one of the most grave, the most easily appreciated defects from normality, one can recognize at once the character of the condition. We have known so long of the great danger of bleeding from a simple incision in the jaundce patient that we were most grateful to Walters for introducing the technic of preparing these people against postoperative bleeding. The intravenous injection of ten cc. of a five per cent calcium chloride solution on three successive days will increase the blood clotting property very materially, and if that is supplemented by a transfusion one can then do the necessary operation for, we will say, common duct obstruction by stone with a very considerable assurance that the patient will not bleed to death as we have formerly seen them, most unfortunately.

It is important, however, to watch the blood clotting power of the blood every day because if one doesn't it is not uncommon after the immediate danger apparently is over to have a secondary hemorrhage that may be fatal, so that under those circumstances another course of calcium chloride plus transfusion will suffice.

In this connection and in conclusion, Mr. Chairman, I would like to draw attention to the analogy between the care of obstruction of the liver by

stone with obstruction of the urinary outflow by the enlarged prostate. We have learned the wisdom of doing the prostatic operation in two stages if necessary, and I think that it is equally important in certain cases of obstruction by stone, having prepared the patient as has been indicated, to go in and do the simplest possible operation under local anesthesia of draining the gall bladder and leaving the stone in the common duct alone. Then at the end of some two or three weeks when the body has been detoxicated, the jaundice is gone, the collemia has faded away, and the liver has stopped its strike and gone back to work, one can then go back and take out the stone with a very great addition to the safety and wellbeing of the patient. (Applause.)

Dr. A. Street (Vicksburg, Miss.): I just wanted to make one or two points in regard to Dr. Mayo's paper. Dr. Mayo mentioned the giving of the ten per cent glucose along with the salt in these very sick case. We have been giving glucose in these sick cases for some time. Formerly we used to have a great many severe reactions. Since the advent of insulin we have added the proper amount of insulin which it has been demonstrated will balance that glucose, and it has been remarkable the way reactions have disappered. We don't seem to have them any more at all.

Now Dr. Mayo and Dr. Haggard mentioned the rehabilitation of prospective surgical cases. Dr. Mayo also mentioned the application of the same measures in medical cases. I have noticed in the recent epidemic of flu that it was not unusual for a case of pneumonia to come in with a vomiting which resembled very much the vomiting we have in high intestinal obstruction, and had the illness, of course, very commonly associated with severe pneumonia. Now it has been known for a long time, for years and years, that the blood chlorides are diminished in the early active stage of pneumonia when the exudate is going into the lung and our observations on these cases show a very marked diminution in the blood chlorides.

The use in these cases of solution of glucose in salt put into the vein would seem to be contraindicated because we have formerly thought that relieving the pulmonary congestion by phlebotomy was more indicated. But I have used glucose and salt with insulin to balance in a good many cases this year, cases that were vomiting, with enormous distension and which had no evidence of pulmonary edema, which is the case with many of these patchy flu pneumonias. They very often have very little tendency early in the disease to pulmonary edema. But I have been very much surprised to see enormous improvement with disappearance of the vomiting very promptly following intravenous glucose and improvement in the tympanites, and I think that I have saved several lives absolutely that would otherwise have been lost.

Of course, everyone knows how applicable these rehabilitating measures that we are talking about are in the vomiting of pregnancy where we have a very comparable condition, diminution of chlorides and interference with sugar metabolism with consequent dehydration and extreme illness. We have been handling the vomiting of pregnancy with glucose, salt and insulin very successfully. (Applause.)

Dr. Mayo (in closing): I have nothing to add in closing other than to call attention to the valuable suggestions made by Dr. Street and to the fact that we who have been long in practice should be very careful indeed to work with the men who are young in medicine. Association with the young men in the hospital has been of the greatest value to me. I have trained my young house officers and fellows to feel that I want them to accept me as their equal and make suggestions to me, and we talk all matters over freely. The scars on a man's soul, which we call experience, come from the deep remembrance of his many failures and the misfortunes that have come to his patients. To the association of the man of little experience in medicine with the man of great experience, the young man brings his dreams and his visions, the older man brings the safeguards of knowledge, the brakes which experience has taught him to apply. Youth gives that quality of spirit and hope for the future that keeps middle age and past from becoming fossilized.

SOME PRACTICAL PROBLEMS IN INTESTINAL OBSTRUCTION.*

F. W. PARHAM, M. D.,

NEW ORLEANS.

It is my purpose here to discuss only some practical problems connected with intestinal obstruction and from the comparatively recent literature to try to formulate some definite rules for their management.

Sir William Taylor, of Dublin, in opening the discussion last summer (1925) on intestinal obstruction in the Surgical Section of the British Medical Association ex-

*Read before the five state Sectional Meeting, American College of Surgeons at New Orleans, January 23, 1926.

pressed a most pessimistic view, maintaining that progress in the management of acute intestinal obstruction had lagged much behind that of other acute abdominal conditions. It gave him almost a rigor when called to a case of intestinal obstruction, because he usually found the patient in an almost hopeless condition. He blamed the general practitioner for this, because he did not earlier realize the gravity of the case. Others who took part in the discussion did not think the surgeon blameless; indeed, blame seemed, in the opinion of some, to attach all along the line: to the patient, his family and friends, the attending physician, the consulting physician and the surgeon. Some of the speakers did not agree with Sir William as to the lack of progress, and hospital statistics were cited to show that the mortality had been reduced materially. That much, however, is yet to be done before we can treat these cases with any sort of assurance, is not to be gainsaid. Murphy not long before he died deplored a mortality of 40% and Deaver said the mortality from intestinal obstruction should be counted nearer 60%.

What can be done to remove this reproach to surgery? Apart from the improvement in our methods which is, I believe, evolving gradually out of the numerous investigations regarding the true nature of obstruction, our hope is in the earlier recognition of the obstruction. The mortality is largely due to the condition in which these cases come to the surgeon. If we could treat the obstruction within the early period the prognosis would be far better. The mortality is directly proportional to the time elapsing from the initial symptoms to the beginning of treatment. It is, I believe, true that the inexperienced surgeon operating early will save more cases than the expert technician operating late. Mr. Grey Turner, of Newcastle-on-Tyne, thought a pamphlet should be published to the profession generally giving the symptoms and signs of early obstruction, but others thought the surgeon's themselves should be approached.

It is undoubtedly important to recognize these cases early. "Too little distinction," remarks Sampson Handley, "is made between early symptoms and those which mark a lost opportunity." How shall we diagnose a case early? Abdominal pain, coming on suddenly, as colic with tenderness, vomiting more or less persistent, according to location of the obstruction, beginning and progressive distention without marked muscular rigidity. In obstruction due to appendicitis, or other *inflammatory* causes, there is usually muscular rigidity (defense musculaire). (Vomiting and distention vary in extent and rapidity of development according to the location of the obstruction—the higher the obstruction, the greater the vomiting.) If with these symptoms and a history of longer than usual constipation an efficient enema fails, and another in an hour or two likewise fails to bring about satisfactory relief, operation is indicated without further delay. Our course would be clearer in such a case, but in a more obscure case, some or all of the cardinal signs and symptoms may be lacking. The utmost care must be exercised not to operate without necessity and yet not to delay too long. The history of the case must be carefully considered and the duration of the obstipation in relation to the habits of the patient must always be given due weight. In such cases I would urge the value of palpation and especially of auscultation of the abdomen. In a few cases an early movement of the bowels may be thus predicted. Case, of Battle Creek, has urged the fluoroscopic and film study of these cases, much information of real value being obtained without the barium meal, though where time and condition permit, the meal gives additional information.

Grey Turner, of Newcastle-on-Tyne, again advocates the calomel test. Four or five grains of calomel are given, one-half

grain every half hour, followed by an effective enema. The bowels will either move or the obstruction be better developed and operation indicated. The chief objection to this plan is the delay, requiring 8 to 10 hours. The failure of the thorough enema is, perhaps, the most striking indication for operation. The case has now clearly become surgical and there is no excuse for further delay. The caution might here be urged: "Never let the sun set on an unrelieved intestinal obstruction." Operation at this early state will often permit of the finding and removal of the obstruction. Generally nothing else but lavage before and after will be required and the mortality will be small.

For purposes of discussion of the treatment the classification of Sir William Taylor is useful:

First stage, marked by vomiting, pain and distension, without muscular rigidity. Treatment: Lavage, operation, lavage. The operation consists of removing the obstruction, if possible; if not, high enterostomy above the obstruction with lavage and plenty of fluids, given by the most effective methods, the most satisfactory being subcutaneous and intravenous.

Second stage: Marked by a deepening of the earlier signs and symptoms: more aggravated vomiting, increasing distension and growing depression. The formula here should be: lavage, operation, high enterostomy, repeated or continuous lavage, and abundance of fluids. It may be possible, even in this stage, to operate, find the cause and remove it, which should be done, if the operative risk is not too great. If the condition does not warrant the radical operation, then a high enterostomy should be done; indeed, it would be best done even where, in this stage, the obstruction has been relieved.

The third stage being an aggravation of the second merely emphasizes the necessity of doing all that has been suggested in the second with some additions intended to meet the intensified pathology. I shall consider in more detail the measures in common for the two stages:

An additional factor has now come into the case, that of toxemia. A very complete account of the investigations made regarding the nature of the toxin elaborated in intestinal obstruction will be found in Ellis's article in Annals of Surgery. I shall not enter into a discussion of this. It is sufficient to say that pathologists and surgeons agree that there *is* a poison generated in the occluded intestine which gives rise to a toxemia, the real cause of death. If the case is seen in time and the toxic contents of the bowels above the obstruction withdrawn, the patient may get well. Copher and Brooks, of St. Louis, in Annals of Surgery, however, take exception to this statement. They assert that the toxin cannot be washed out, that nothing but excision of the obstructed intestine will suffice to remove the toxin; that even its absorption cannot be prevented, and that it cannot be neutralized after absorption into the tissues.

We might agree that a time arises when the tissues are so saturated with the absorbed toxin that the removal of the original focus of fluid is useless because it is too late. We know this occurs in tetanus after the chemical combination of the toxin with the spinal marrow has been accomplished. The reports from the surgeons, however, now indicate that jejunostomy has saved cases that without it would have died. So much depends on its timely use that we must chiefly attribute its failure to its being used too late. How does it act? By emptying the obstructed intestine, thus inhibiting absorption, and, in conjunction with the lavage, by relieving the stomach of the regurgitating fluids.

The operation usually attributed to Victor Bonney (Middlesex Hospital reports, 1910) consisted in making an enterostomy high. His theory was that gas was found in these cases just above the obstruction, fluid being found higher up only. Sampson

Handley and others have not been able to verify this observation and think there is nothing to justify it. It is more reasonable that the fluid should collect first just above the obstruction and move upwards. Sampson Handley objected to Bonney's external drainage, because there was loss of jejunal juices and the fistula has later to be closed, and suggested a jejuno-colostomy with a cecostomy. This objection to Bonney's method was well taken, because his technic (Emanuel Senn's) was the fatal point in his method, as pointed out by Summers. The objection of loss of juices was not strong, because this could be controlled by clamping the tube. If the jejunostomy be done by the Long-Witzel valvular method all of Handley's objections are overcome. The serious objections to Handley's procedure are evident. The jejuno-colostomy being within the closed abdomen cannot be used for lavage or introduction of nutriment, but I believe the principal objection is the turning into the colon of the contents of the jejunum high up before appreciable digestion and nutrient absorption has been accomplished. Every inch possible of the upper intestine should be made available for this purpose, and this is not secured in Handley's procedure. The operation, moreover, is difficult and time consuming, in the circumstances under which it is called for, and though it has proved successful in a few cases, it certainly ought not to have preference over the simpler procedure here advocated.

Ravdin, of the University of Pennsylvania, has suggested the simplest access to the jejunum, especially applicable as a primary operation to the cases where the abdomen is not already opened, or has been closed at a previous operation. The procedure can easily be carried out under local anesthesia as it involves no complicated search and little manipulation. "An incision about 2 inches long is made just posterior to a prolongation of the anerior axillary line beginning at the tip of the eleventh costal cartilage. The incision is carried directly down to the peritoneum through the external oblique, internal oblique and transversalis muscles with no regard to the direction of their fibres.

The peritoneum is opened for a distance of about one inch. In the majority of cases a high loop of the jejunum, which will vary from 8 to 10 inches from the duodenojejunal flexure, will immediately present in the opening. If this does not occur, the finger can be introduced just anterior to the upper portion of the descending colon and a similar loop be brought into the opening. The abdominal incision being small, suture is not necessary." A tube, 15 to 18 French, is then put in by the Witzel method, and brought through the omentum as suggested originally in 1916 by John Wesley Long, of North Carolina, and popularized by C. H. Mayo in 1917.

Afterwards when the tube is of no further use it is simply drawn out and the fistulous wound closes without trouble.

I would mention here an interesting case in illustration:

A gentleman was operated on for a ruptured gastric or duodenal ulcer. Following this he became distended and vomited excessively. Thorough lavage failed to relieve him and a jejunostomy was done with a de Pezzer catheter. Subsequently the opening became much enlarged and the catheter came out or was removed. The problem became then one of controlling the effect of the juice on the abdominal wound. This was effectively accomplished by the use of the electric suction apparatus, but after a time he began to emaciate owing to the escape of his nutriment through the large jejunal fistula. A resection of the bowel was done and a lateral anastomosis settled this difficulty and the patient made a rapid recovery.

Such a catastrophe would ordinarily be prevented by inserting a straight tube or catheter by the Long-Witzel method as described.

You are doubtless all familiar with the procedure of Wilkie, which shows indubitably that Handley's objection to jejunostomy does not hold. In Wilkie's case a catheter was inserted to relieve distention

following operation for ruptured appendix, but it soon became evident that it had been inserted below the obstruction. A high incision was made and a jejunostomy was done. Instead of letting the discharge flow into a receptacle, the upper catheter was connected by a glass tube to the lower one. The scheme worked beautifully; no fluid was lost, but the obstruction was overcome and in a few days both catheters could be removed. This trick is worth bearing in mind.

The method of McKenna may be used with advantage in bad cases. He uses two No. 18 French catheters, one toward the stomach, the other down the jejunum.* Orr and Haden have recently asserted as a result of experiments on dogs that in the treatment of experimental obstruction of the jejunum, "jejunostomy does not prolong but seems to shorten life. * * * When these experimental observations are compared," they remark, "with the clinical reports of the value of jejunostomy for intestinal drainage, one hardly knows how to draw conclusions properly. It is possible that the patient does not react like the animal to jejunal drainage." They do not wish to advise against jejunostomy in the treatment of ileus.

I believe in any advanced case where a jejunostomy is done it would be well to add a cecostomy, the lower drainage being a decided advantage, as recommended by Sampson Handley.

In addition to the measures just described there is a further suggestion well worth our consideration, in these trying cases.

Haden and Orr in a series of experimental observations on high intestinal obstruction in dogs seem to have demonstrated the following facts:

There is in intestinal obstruction at first a fall of chlorids in the blood, then follow a rise in non-protein and urea nitrogen and a rise in CO_2 combining power. There is in CO_2 combining power is probably an incident in chloride metabolism, whereby sodium ions are set free, uniting with CO_2 to form bicarbonates causing an alkalosis. The chlorides seem to exercise a protecting influence, holding in check the non-protein nitrogen rise and the CO_2 combining power. These investigations have shown that the addition of chlorids to the blood will delay the development of the toxic effects and when used in conjunction with drainage of the obstructed intestine will, especially if done early, bring about a decided amelioration and sometimes prompt recovery.

Walters, Kilgore and Bollman in a paper reporting their investigations on the blood changes in duodenal fistula, on experimental and clinical study, show the same chemical changes as those found by Haden and Orr in high intestinal obstruction. These consist of increasing alkalosis, decreasing concentration of chlorids in the blood serum and progressive rise of blood urea, and the response to intravenous injections of chlorids, glucose and water is similar to that in intestinal obstruction, reported by Haden and Orr and by McVicar. Walters, Kilgore and Bollman showed, however, that the restoration of the chlorids to normal was ineffective unless a sufficient amount of water was at the same time introduced. Intravenous injection, twice daily, of from 500 to 700 cc. of a 1% solution of sodium chlorid "will maintain life in dogs with duodenal fistula for more than three weeks, * * * whereas without such injection death occurs within three or four days." The parallel with intestinal obstruction seems practically complete. The use of glucose alone is not sufficient. By its diuretic effect it aids in the elimination of the accumulating non-protein nitrogen, but it has no effect on the blood chlorids. The combination of glucose with chlorids and sufficient water markedly assists the elimination of the urea and non-

*Dr. W. J. Mayo mentions in his editorial in S. G. & O. that Sir William Taylor, of Dublin, uses also two catheters, one to empty through and one to feed through.

protein nitrogen and stops its further accumulation.

Water and hypertonic solutions of sodium chlorid and glucose are diuretics of the first order. These solutions stimulate peristalsis. McVicar uses lavage to remove excessive accumulations of secreted material, but not because this secretion is toxic. He deprecates the use of alkalis, for example, sodium bicarbonate, because they increase the alkalosis and predispose to tetany. They are to be used only where there are distinct evidences of acidosis.

In spite of the experimental conclusions of Copher and Brooks that the introduction of chlorids into the blood has little or no influence upon the course of high intestinal obstruction there seems sufficient clinical evidence of its value in the treatment of man to make it the surgeon's duty to use them in conditions where the blood examination shows their depletion. McVicar, Dixon, Balfour, the Mayos, and many others have testified to the value of this procedure, and combined with glucose we have what will often prove a life-saving measure.

Dr. Roscoe Graham, of Toronto, in a personal communication, expressing the views of himself and Dr. F. N. G. Starr, speaks as follows: "* * * if we find the blood chloride low prior to operation, we feel the prognosis very much less hopeful, and there is no debate about draining the proximal portion of the obstructed bowel; when the blood chloride is low either before or following operation, an attempt is made to raise it to normal by means of the introduction of chlorides in the form of interstitials of normal saline, giving ammonium chloride by mouth and by rectum and a high percentage of sodium chloride intravenously." "If the situation is desperate we give to an adult 600 ccs. of a six per cent solution intravenously. We have found this to be very efficacious and to produce fewer reactions than the more concentrated amounts." They have found Frosst's Keratan-coated elastic capsules containing 22½ grains of ammonium chloride given by mouth very useful. They have many times been able to raise the blood chloride from 23 mg. per 100 cc. to normal in 12 hours by giving such capsules, while failing by any manner of administration of sodium chloride. They have given with great satisfaction per rectum 180 grains of ammonium chloride in 3 ounces of water every four hours.

Another practical problem worth mentioning here is concerned with fecal drowning so clearly described some years ago by Willys Andrews. It sometimes happens when by operation an obstruction is released, reverse peristalsis will carry the fecal contents rapidly up into the stomach, where vomiting may result in drowning if the glottidal reflex has been abolished by the anesthetic. On its first appearance, the head must at once be lowered and the gastric lavage be at once begun until the regurgitation is stopped. I have in one case observed the process continue for a half hour before it could be stopped and only then when the head had been brought up to the level of the body. The anesthetic is also a consideration of importance, on account of its damaging effect on the liver in bad-risk cases. Bevan and others have sufficiently emphasized this danger. Nitrous oxide and oxygen, ethylene, are to be given preference in these cases. Combined with infiltration of the abdominal wall with novocain, the objection of insufficient muscular relaxation will be largely overcome. Sometimes spinal anesthesia may be the anesthetic of choice.

Finally, I would lay stress upon the Jutte or similar small tube passed through the nostril; this may be left even several days at a time, during which period water or other fluids may with advantage be given freely by mouth without fear of overloading the stomach, because the tube may quickly relieve the distress at any time. Veno-clysis or the Matas intravenous drip may render in many cases invaluable service.

BIBLIOGRAPHY.

Ellis: Ann. of Surg., 75:429, 1922.

British Medical Journal, 1925, II: Nov. 28, 1925. (Discussion on Intestinal Obstruction).

Case: Battle Creek Bulletin, July, 1925, and Annals of Surgery, 79:715, May, 1924.

Copher & Brooks, Annals of Surgery, 78: 755-760. Dec., 1923.

Victor Bonney, Arch. Mid. Hosp. Rep., 1910, 21:39.

Summers, Jno. E. Annals of Surgery, 72: 201, Aug., 1920.

Ravdin, S. G. & O. 40: 426, Mch., 1925.

Long, John Wesley. Southern Surg. Trans., 1916, and Texas J. M., April, 1923.

Mayo, C. H., J. A. M. A., 79: 194-197, July 15, 1922; Ann. of Surg., 66:568, 1917.

Wilkie, D. P. D. B. J. S., Jan., 1925.

McKenna, Hugh. J. A. M. A., 80: 1666-1669.

Haden & Orr. Numerous articles in J. Exp. Med. and other Journals.

Orr & Haden. J. A. M. A., Aug. 28, 1926, 87: 632.

McCallum. Bull. Johns Hopkins Hosp., 31:1, 1920.

Walters, Kilgore & Bollman. J. A. M. A., 1926, 86: 186--189.

McVicar. Am. J. Med. Sc., 169: 224, Feb., 1925.

Dixon. J. A. M. A., 1924, 82: 1498.

Balfour. Surg. Cl. N. A., June, 1925, Case 4, page 679.

W. J. Mayo. Surg. Cl. N. A., June, 1925.

Willys Andrews

Copher & Brooks. Annals of Surgery, 78:755-60, December, 1923.

Graham & Starr. Personal Communication, Jan. 21, 1926.

Bevan & Favill. Anesth. Tox., J. A. M. A., 1905, Sept. 2.

Erlanger & Woodyatt. Intrav. Glucose in Shock, J. A. M. A., 69:1410, Oct., 27, 1917.

Bollman, J. L. S. Cl. of N. A., June, 1925. Uses of Glucose.

Pringle. Lancet, 1923, II: 62 and Lancet, April 25, 1925, 869.

Lee & Downs. Annals of Surgery, 80: 45-50, July, 1924.

Whipple. Anhydremia, J. Ex. Med. 39: 117-127, Jan., 1924.

Handley. Br. J. S., 12:417-34, January, 1925.

Editorial, S. G. & O., Nov., 1923. (W. J. Mayo.)

A PRACTICAL CONSIDERATION OF DIABETES MELLITUS.*

G. W. F. REMBERT, M. D.,

JACKSON, MISS.

PREAMBLE.

The object of this paper is to put before you some of the plainer facts in the knowledge and treatment of diabetes mellitus and effort has been made to avoid highly technical terms and procedures. There has been much intricate detail in the study of this disease and in the development of insulin, but for the busy physician, especially that one in general practice, with little time for individual laboratory work and study, it would appear that a plain and concise outline will be of more value, hence this effort.

DEFINITION.

Diabetes mellitus might well be described as a disease in which the patient is unable to convert a sufficient amount of carbohydrate taken in the food into glucose to carry on the daily food requirements. On account of the truthfulness of the slogan "fats are burned in the flame of the carbohydrates" and as 46% of all proteins and 90% of the fats become fatty acids in the body, unless there can be a sufficient amount of glucose utilized in the body to burn these, there will result incompletely oxidized fats or ketone bodies with the formation of acetone, diacetic acid and b.-oxybutyric acid.

IMPORTANCE.

It is, then, these poisons that are especially harmful and dangerous to the patient and which are responsible for coma and the fatal termination in the majority of the deaths in diabetes mellitus, and while surgical complications and other disease-states are at times encountered in the course of this disease (and they will be taken up, by other of your essayists), yet the great outstanding danger of every case of diabetes is unquestionably that of acidosis.

HISTORY.

While this disease was recognized and described by Areteus as early as 800 A. D., and a description of the islets of the pancreas by Langerhans in 1869, which islets still bear his name, yet it was not until 1889-90 that von Mering and Minkowski made their report on the results of the complete extirpation of the pancreas in dogs as the results of which rapid and fatal glyco-

*Read before the Mississippi State Medical Association meeting, Jackson, May 11-13, 1926.

suria developed, which condition co-incided with that of diabetes mellitus. Ssobeleff and Schulze in 1900 also showed that when the pancreatic duct was ligated or when grafts were made of the pancreas there was a degeneration of the pancreatic structure, with the exception of the islets, and in such cases glycosuria did not occur, the conclusion was then reached that there was some secretion from these islets that brought about the usual carbohydrate metabolism and the name of insulin was suggested by Schafer in 1916.

ETIOLOGY.

From an etiological standpoint many surmises have been made. Heredity, not only familial but racial, has been believed of importance for it has been frequently observed that more than one case occurs in a family and the Jewish people and higher class Hindus have been especially prone to the disease. Overweight has been regarded as an especially predisposing factor and Joslin has humorously depicted the "Diabetic Club of America" in which obesity was regarded one of the prime requisites for membership, and called attention to the fact that over the age of 50 there were 20 members of overweight to every 1 of normal weight. Also, Paullin, in a series of observations, reported that the overweight are 19 times more liable to diabetes than those of normal weight. Again, as the disease is regarded by many as the result of a pancreatitis, infection, especially of the teeth, tonsils, sinuses, and gastro-intestinal tract, is believed to play an important role. Lichty has reported several cases of apparently true diabetes associated with gall-bladder disease in which the diabetic symptoms cleared after the operation for the biliary condition. Psychical influences, as grief, worry, business strain, and fright, probably through endocrine influences, viz: the thyroid and adrenals, and, according to Leschke, disturbances of the sympathetic nervous system and mid-brain, might precipitate the disease.

PATHOLOGY.

While it was formerly regarded that there was a true and fixed pathology in diabetes mellitus, viz: a degeneration of the islands of Langerhans, yet, this is now by no means regarded as sure. Wilder recently reported several rapidly fatal cases of diabetes mellitus which on autopsy showed no evident disease of the pancreas, and in a recent personal communication from Adams, Williams of Rochester has just reported a case of diabetes that died 15 days following the onset of symptoms and in which the pancreas, at autopsy, was normal in every respect. I have understood that Joslin has recently reported a series of some 26 cases of fatal diabetes which at autopsy, too, showed no apparent involvement of the pancreas structure. Newburgh and Camp recently described a case of glycosuria which in every respect appeared true diabetes mellitus and which complied with all the usual tests for this disease (the patient being a young married woman and mother in the thirties) and in which there was a plus 35 metabolic rate as the result of thyroid excitation and which proved to be an anxiety state in which by psychoanalysis by Camp there was found to be an unwarranted oedipus complex, which when the fallacy of the woman's fears were proven to her, her basal metabolic rate rapidly fell to normal and all signs and symptoms of this apparent diabetes disappeared. But whatever is the state of the pancreas, it is believed that its insulin-producing power is interfered with, and while insulin has been demonstrated in the muscles and some of the other tissues of animals, yet, such insulin, when extracted, has been rather inert in bringing about carbohydrate metabolism when injected, and it is felt that the pancreas serves as the converter or transformer of the inert insulin into a utilizable kind.

SYMPTOMS.

The symptoms are variable and inconstant, and while many cases of the disease are classical in the symptom arrange-

ment—such as excessive hunger and thirst, frequent and copious urination, progressive loss of weight and strength—yet, it is not infrequent that the accidental finding of sugar in the urine is the first intimation of the disease being present. Sometimes such complications as recurring boils and carbuncles, balanitis, pruritus ani and vulvae call attention to the advisability of an urinalysis at which time the true nature of the trouble is found.

DIAGNOSIS.

The diagnosis is easy in a well developed case in which the cardinal symptoms, including glycosuria, are present, especially when an estimation of the blood-sugar level reveals the presence of an hyperglycaemia. In milder cases, however, none of the symptoms as mentioned might be prominent and even glycosuria might not be present when the examination is made for the reason that the patient might have been fasting or resting or on a low carbohydrate intake. A mistake might be made in the urine examination in which sugar, if present, is not demonstrated on account of faulty solutions or technic, or, if supposedly present, might be due to drugs, albumins, phosphates, uric acid, creatinin, levulose, pentose or glycuronates. In these cases errors can usually be avoided by using fresh Benedict's qualitative solution, diluting the urine one or more times. If doubt still remains, the fermentation test for the urine and estimation of the fasting blood-sugar level will usually clear up the doubt. As for the glucose tolerance test and in which so much confidence has been placed by many to show by the so-called curves the presence of a potential diabetic state, while it might have some value from a technical standpoint, I believe that the majority opinion is that it is too extreme and fine a diagnostic procedure to be of practical value.

Again, glycosuria can be present in conditions other than diabetes mellitus, e. g., in transient states as in toxic goiters, some brain injuries, emotional stress and after the overeating of sugars, and in permanent cases as in renal diabetes, idiopathic or during pregnancy or in nephritis as reported by Wordley. These cases show a normal or sub-normal blood-sugar level and the output of sugar in the urine is not influenced by the intake of carbohydrate and they are, apart from the glycosuria, without symptoms, are not associated with acidosis and are supposedly due to an unusually low kidney threshold for sugar.

On account of the fact that diabetes is essentially a condition of reduced carbohydrate tolerance and the severity of every case is measured by its own tolerance for glucose, dietary management becomes necessarily the prime factor in the treatment. There have beeen many dietary plans advocated, e. g., Woodyat, Newburgh and Marsh, Joslin, Mosenthal, Allen, and others—some advising high fats and low carbohydrates, others with low fats, high carbohydrates and moderate proteins, and various other combinations. Allen advised a continuous low maintenance diet, even to the point of mild or moderate starvation. Fasting days have been suggested and tried—one day out of seven, at which time the pancreas was, by fasting, given a rest—and in some cases with apparent benefit, and while the very low and prolonged maintenance diet has been very beneficial in some cases, in others, the prolonged state of marked undernutrition has precipitated some conditions which have been harmful in the way of infections, edemas, etc., and the failure to supply a sufficient food supply has produced a metabolism of the body tissues with a constant glycosuria resulting.

While many formulas for diet prescribing have been advocated, the following serves very well for practical purposes in the majority of cases—the patient is weighed and measured and the most favorable weight for the height, age and sex of that individual is estimated and this weight in pound is converted into kilograms by multiplying by 2 and one-fifth. If the

patient is an adult and is in a very good state of nutrition, a maintenance diet of 25 to 30 calories per kilogram of body weight per day will be a good basis with which to begin. Having then estimated the approximate number of calories that should be given each day and allowing 1 gramme of carbohydrate per kg.; ¾ to 1 gm. protein per kg.; and sufficient fats to make the balance of the caloric requirement for the day. If this diet is tolerated without glycosuria and the fasting blood-sugar level which was previously estimated is found to be returning to normal (.08%-.12%) the allowance can then be gradually increased, approximately 5 gm. carbohydrate and 20 gm. fat, in an average weight adult. This can be increased as the conditions would permit and as the exercise is increased but rarely should any diabetic, regardless of weight or exercise, be allowed more than 2500 calories daily.

Newburgh and Marsh and others have shown that for the average adult ¾ gm. of protein per kg. per day will maintain the necessary nitrogen requirements, but for those who are weak or who have lost much weight 1 gm. per kg. will be better. Children, however, on account of their growing body frame naturally require more protein and should be given 1½ to 2½ gm. per kg. per day.

Campbell has advocated a low carbohydrate, low protein and high fat diet, basing the formula on the surface area of the patient, according to the Aub-DuBois chart for estimating the square metre measurement of the body surface. In this way, he first finds the height and weight of the patient and from these two factors he finds the square metre measurement of the patient's body surface and then uses a scale showing the ideal number of calories per day per square metre, the scale ranging in years from 10 to 70, and estimating the caloric requirement per day from 1236 to 876 for males and 1200 to 816 for females, the quirement for sq. m. of body surface progressively becoming less per kilo from the age of 10 upward. For children, it is impractical to follow the above so that weight only is the basis for estimating and up to 10 kg. wt. there is allowed 55 calories per kg. per day; from 10 to 15 kg.—50 cal. per kg; 15 to 20 kg. wt.—50 cal. per kg. per day is allowed. His formula then is (total calories from surface area chart):

Protein —2/3 gm. per kg. body wt.

$$\text{Carbohydrate}—\frac{M\ (\text{maintenance})—10\ P}{30}$$

$$\text{Fats} \quad —\frac{M}{10}\ (\text{maintenance})—\frac{P}{2}$$

Example: Male, age 40, height 5 ft. 8 in., weight 132 lbs. (60 kg.) S. A. 1.75 sq. met. Cal. req. daily 1.75x948—1659.
Pr —2/3 of 60—40.
Ch —1659—400 (10 P.)—1259+30—42.
Fat—1659+10—166—20 (P+2)—146.

Women at same age and height and weight requiring 864 per sq. met.—1512. P. 40; Ch. 37; Fat 131.

In arranging a diet it is essential that the ratio between the fats and glucose (ketogenic-antiketogenic ratio) be kept within safe limits, for otherwise acetone will result. Woodyat believes that this ratio should hardly be more than 1.5:1, while Wilder and some others have felt that a ratio of 2:1 would be safe, and some have felt that a ratio of even 2½ to 1 might be safe in some cases, but that limit is too high for safety and had better not be attempted. It is the rule at the Toronto Hospital to be in dietary management with a ratio of 1.3 to 1 and gradually increase the fats until the ratio is as much as 1.7 to 1, rarely ever going higher than this amount.

A very necessary precaution is that the fasting blood-sugar level should be carefully watched throughout the case, and especially should this be done before making diet increases. While many are inclined to ignore the frequent estimation of

the blood-sugar percentage, today, probably more than ever before, it is found that to do so is not only fallacious but actually dangerous as the recurrence of glycosuria and reactions from insulin (if given) are much more likely.

If after a few days of basal diet restriction the urine is sugar-free and the blood-sugar level is .13% or lower, it is then safe to increase the diet by adding 5 gm. carbohydrate and 20 gm. fat, making a total increase of 200 calories; if after a week or ten days the same conditions prevail in that the urine is still free of sugar and the fasting blood-sugar percentage is not over .13% and the patient is increasing the exercise the same increase of 5 gm. carbohydrate and 20 gm. fat can be made; this increase can be done a third time in 10 to 14 days if the conditions justify, as before. After this time, if the urine is still sugar-free, acetone-free and the patient doing a generous amount of exercise, 7 to 10 gm. protein and 10 gm. fat can be added to the diet—provided that the blood-sugar is not over .13%.

If, however, the patient does not become urine sugar-free after the probationary period of 5 to 7 days, insulin should then be used. While a frequently used method is to begin with small doses of insulin, given ¼ to ½ hour before each meal, gradually increasing the dose until the sugar disappears from the urine. (This is in the nature of a symptomatic treatment and more likely to precipitate an insulin reaction by producing an hypoglycaemia). A better method is to estimate the number of gms. glucose in the 24-hour specimen of urine and then give a sufficient amount of insulin—allowing 1 unit for every 1½ to 2 gm. sugar in the urine. (The glucose value of insulin is regarded as 1 to 4 gms. for every unit insulin, with 1½ to 2 gms. as an average). The best method of insulin dosage, and the one that will most quickly restore the blood-sugar and urine to normal levels, is to estimate the fasting blood-sugar percentage and then give 2 units insulin for every .01% above the normal reading of .13%. On account of the fact that some are more susceptible to the action of insulin than are others, it is very advisable that insulin be cautiously used throughout, and especially at first, until the patient's tolerance for insulin can be found, thereby preventing reactions.

There is a question on the part of many as to the number of doses that should be given, some advocating one, others two, and some believing three doses better. For the average case three doses daily (½ hour before meal) seems the best plan except when the daily requirement is 10 units or less, in which case a dose given morning and evening will suffice. Smaller doses might be given at one time, preferably in the morning, before the breakfast. In very severe cases, insulin might be best given every 4 hours.

One must be constantly on the alert for insulin reactions, due to the rapid production of hypoglycaemia, which might come on most unexpectedly and the especial symptoms of which are restlessness, nervousness, apprehension, pallor or flushing of face and body, hot flashes, hunger and fatigue. In case the reaction is more severe coma might develop, and unless sufficient carbohydrate is given fatal results may take place. As soon as the above symptoms are noted, ½ glassful orange juice, 1 or 2 lumps of sugar, 1 or 2 teaspoonfuls glucose, a stick of candy or other available carbohydrate should be given. Should the condition become more profound and coma develop, glucose should be given intravenously in 20 to 30 cc. doses of 10% to 50% solution.

While insulin is a most valuable adjunct in the treatment of diabetes it is exceedingly dangerous when used carelessly or without a true knowledge as to the underlying blood-sugar level and not judiciously combined with careful and strict dietary restrictions.

ACIDOSIS—MILD.

In the treatment of acidosis, where the symptoms are not very severe and the patient not especially drowsy, it is best to withhold fats from the diet and to give insulin, best combined with 90 gm. orange juice, every 4 hours, testing the urine for sugar and acetone each time before administration. If with Benedict's solution the reaction is red, 15 units of insulin should be given;—if yellow, then give 10 units;—if green, 5 units, if no sugar reduction, the orange juice only will serve to bring about acetone body combustion.

ACIDOSIS—SEVERE.

Should the acidosis be more severe, and the patient drowsy, restless and with very slow respiration, and sugar and acetone found in the urine, insulin should be at once given in 20 to 40 units and repeated in dose of 10 to 20 units every 2 to 4 hours until the conditions become improved. Where possible the CO_2 combining power of the plasma should be done. If the blood sugar level is high and a great deal of sugar is in the urine the insulin may be given without the administration of glucose at the time. Later doses, however, it will probably be safer to combine with glucose in some form. If fluids and glucose cannot be well taken by mouth, they may be given by hypodermoclysis, by drip or intravenously.

In the case of advanced coma it will be necessary to administer insulin in 40-60 unit doses, combined with an equal number of grams of glucose. The insulin should be given subcutaneously and the glucose by mouth or subcutaneously, but if the conditions are sufficiently severe both insulin and glucose may be given intravenously, very slowly, not more than 10 cc. per minute. Both should be repeated every hour or two if necessary, according to the condition of the patient. In the meantime the patient must be kept well warmed with blankets, the bowels well emptied with enemas and castor oil if seemingly necessary, and generous quantities of fluids given. In every case of supposed diabetic coma care must be exercised to see whether any other condition, such as apoplexy, uraemia or some other intracranial condition is responsible instead of the diabetes, but careful examination of the urine for glucose and acetone and of the blood sugar, CO_2 combining power will serve to clear the situation.

Joslin calls attention to the fact that diabetic coma should always be looked upon as an accident and always avoidable. He feels that it is either due to the overeating of food or too rapid combustion of the body itself by hyperthyroidism or fever or infections, which increase the metabolic rate so fast as to produce a hypoglycaemia and excess of acetone. In both cases he feels that insulin is demanded and should be given in sufficient doses without loss of time.

CONCLUSION.

In conclusion I can not do better than quote from the Canadian Medical Association Journal:

"Diabetes mellitus can be successfully treated in the less severe form by giving a properly balanced diet; in the more severe, by proper diet and an adequate daily dosage of insulin. The success of treatment is dependent upon the physician for the institution of proper treatment, and upon the patient for the continuation of the treatment prescribed. A prescription of a properly balanced diet is of as much, or even greater importance for a case of diabetes mellitus than is one of drugs, in the majority of the diseases the physician is called upon to treat. In the beginning of treatment the value of the month or six weeks' stay in an institution with proper facilities for the investigation and dietetic control of cases of diabetes mellitus cannot be overestimated. The case can be more fully investigated and the effect of an accurate diet carefully controlled. The patient appreciates more readily the value of proper diet in the treatment of his condition, and be-

comes familiar with the character, amount and preparation of the various foodstuffs constituting his diet. In an institution the tuberculous learn how to live; the diabetic, what to eat."

SURGERY IN DIABETICS.*

J. W. BARKSDALE, M. D.,
JACKSON, MISS.

Since the introduction of insulin as a remedial agent in the treatment of diabetes, surgery in this class of patients has been robbed of many of its terrors. Prior to the discovery of this remedy, operations on diabetics were seldom undertaken except for gangrene, carbuncle or other septic troubles. It is, perhaps, true that the incidence of surgical ailments is proportionately greater in diabetic than in non-diabetic troubles and the percentage of fatalities should not be greatly in excess of an average for similar operations in non-diabetics.

In addition to the relief of the particular condition for which surgery is undertaken, many authorities comment on the somewhat remarkable improvement that often takes place in the diabetes as the result of surgical intervention. This can, in some measure, be attributed to the enforced rest and the dietetic restrictions that necessarily accompany operation. Apart from these facts, however, there often seems to be a permanent improvement in the blood sugar percentage and the urinary output of sugar that cannot be accounted for by the short period of time which is required for surgical convalescence; therefore, the relief of surgical ailments not only corrects the condition for which surgery is primarily undertaken but is often a most potent factor in the prolongation of life from a purely diabetic standpoint.

I shall not attempt to enumerate the various surgical conditions for which operation may be demanded, but, suffice it to say, that they cover practically the entire range of surgery. I shall discuss later on, in a little more detail, septic conditions and gangrene as these two can be considered, to a greater or less extent, as more or less constant accompaniments or complications of diabetes rather than separate and independent pathologic processes.

There are certain facts well worth remembering which should be borne in mind in approaching an operation in diabetes. Not infrequently these patients come in with a marked degree of acidosis or threatened coma, in which condition delay would seem to be advisable in an effort to counteract or combat these manifestations. If the disease for which one proposes to operate is not emergent, a postponement of operation until these symptoms shall have been corrected may be advisable, but, as will be shown later on in sepsis and gangrene these two may be the factors which are directly responsible for the acidosis and no improvement may be looked for until the infectious process is relieved. Joslin gives the fairest and most unbiased statement of the surgical aspect of diabetes of anyone with whose writings I am familiar, having treated extensively on this subject. He says, "All surgical consultants agree that any infection in a diabetic is an emergency injuring a diabetic's tolerance for carbohydrate and demanding immediate operation. In fact, so intimately are tolerance and infection associated that each serves as an index of the state of the other." Again he says, "The factors which favor surgical success in diabetes are, first of all, an early diagnosis and an early decision to operate. If surgical delays are dangerous under ordinary circumstances in diabetes they are disastrous. The physician who presents the facts to his patient so clearly that he will recognize the necessity of being operated on at once, is lowering surgical mortality just as much as the surgeon who

*Read before the Mississippi State Medical Association meeting, Jackson, May 11-13, 1926.

operates gently, rapidly and deftly. * * * The principle must be recognized that the surgical necessity determines the day (or night) and hour of operation. * * * to the surgical condition the medical treatment must conform. * * * If you treat him first for the diabetes and second for the operation the duration for that case of diabetes is apt to be brief."

The chemical aspects of diabetes have been touched on by others in this symposium so that I shall not indulge in useless repetition here. I must say, however, that it is exceedingly unwise to restrict the carbohydrate intake prior to operation as it is often of vital importance in the prevention of acidosis to increase the carbohydrate supply to the utmost, thereby assuring ourselves that the liver is fairly well stored with glycogen. This fact should be borne in mind after, as well as prior to operation, be encouraged at as early a period as the patient is able to take nourishment. This applies with equal force to the introduction of liquids into the body, by the mouth if tolerated, if not, by subcutaneous injection and proctoclysis. A five per cent glucose drip will often give an added amount of carbohydrate as an adjunct to its administration through other avenues.

The choice of an anesthetic is of great importance. Although there is a tendency to the production of an acidosis as a result of the administration of ether, nevertheless this anesthetic has been used preferentially by many excellent surgeons with good results. Nitrous oxide-oxygen has met with a great deal of favor and has been used extensively in recent years with a lowering of mortality over ether administration. Of ethylene I cannot speak authoritatively as I have had neither personal experience with it in diabetics nor have I seen any statistical data with reference to it in connection with this disease. There can be no doubt that local anesthesia is greatly to be preferred wherever possible or spinal anesthesia in such cases as cannot be locally anesthetized but can be by the intra-spinal injection of novocaine.

It is of extreme importance that all tissues be dealt with as gently as possible, avoiding all unnecessary traumatism. To this end a tourniquet should never be used in diabetic gangrene as it may be the added factor that will result in sepsis or gangrene of the stump. Formerly it was the custom to make all amputations above the knee for gangrene of the lower extremities, whereas, now practically all are amputated below the knee where the gangrenous process is confined to the foot, and this change, I feel, is due to the avoidance of the tourniquet and the proper exhibition of insulin. When one considers the extreme damage that is often encountered in the blood vessels of the lower extremity, an obliterating endarteritis of the smaller vessels and atheroma or arteriosclerosis of the larger ones it can readily be seen why any constriction of the limb might result in a sufficient injury to the arterial trunks to favor the recurrence of gangrene in the stump. We have operated on cases of gangrene where the tibial arteries would crush like pipe stems when grasped by forceps.

As there is a large responsibility resting on the shoulders of the medical man when some surgical complication supervenes, so also would the surgeon recognize the necessity for the closest co-operation with the medical man after operative measures have been resorted to. While the surgical condition must not be lost sight of, nevertheless the purely diabetic aspect of the case should be promptly turned over to an internist who is thoroughly familiar with the modern conception of diabetes and its treatment. It has been my invariable practice in all cases of diabetes requiring surgery immediately to call in a medical consultant and have him assume full responsibility for the dietetic and medical treatment of the disease. I feel that thus the best interests of the patient have been conserved and cases have been carried to a successful issue

that otherwise might have resulted fatally. It but serves to illustrate here, as elsewhere in medicine, that the field is a broad one and that harmony and concert of action in all branches of medical endeavor are essential if we would render to our patients the utmost of service, forgetting petty jealousies and vanities and striving only for a single purpose, the welfare of the patient.

THE SPHENOID AND POSTERIOR ETHMOIDS AS SOURCES OF FOCAL INFECTION USUALLY OVERLOOKED.

AMEDEE GRANGER, M. D.,
Director, Department of Radiology, Charity Hospital, Professor of Radiology Graduate School of Medicine, Tulane University.

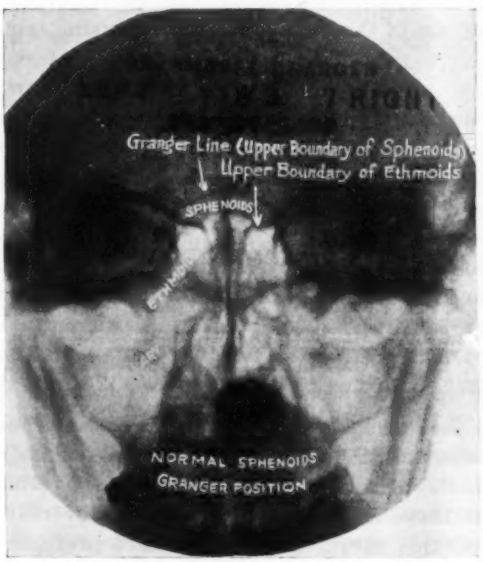
NEW ORLEANS.

As the title of our paper indicates, we will limit our remarks to a consideration of the posterior nasal sinuses only. Diseases of the frontal, maxillary and anterior ethmoids are not so likely to be overlooked, as the examination of these sinuses can be made readily and satisfactorily. On the contrary, the examination of the posterior ethmoids and especially of the sphenoids even by competent rhinologists is difficult, usually unsatisfactory and very often impossible.

Since 1922, we have devoted much time to the study of the sphenoids and ethmoids by means of X-ray and we have become thoroughly convinced that these sinuses are the sources of focal infection in cases of headaches, neuralgia, neuritis, arthritis and asthma much more frequently than is generally supposed.

We believe that the frequent absence of local or nasal symptoms in these patients is largely responsible for the fact that they are not seen by the rhinologist and that the posterior sinuses are not suspected by the physician who very naturally looks for the trouble in the more common and better known sources of focal infections, such as the teeth, appendix, gall-bladder and renal pelvis.

In the cases of posterior sinus disease there is a chronic inflammation, sometimes of many months standing, following some acute infection which may be entirely forgotten. The lining membrane of the sinuses has undergone hyperplastic changes and in the more severe cases granular or even polypoid degeneration. When the severe cases are seen by the rhinologist, he readily makes the diagnosis from the presence of pus on the posterior pharyngeal wall or pus or polypoids or both on the middle turbinate or in the middle meatus.



In such cases, pathology of the sphenoid and ethmoid is clearly indicated on any good radiograph of this region by the increased density or the marked opacity of the diseased sinuses.

In our experience, however, the most common pathology of these sinuses has been a hyperplastic condition of their lining membrane, and not infrequently of their peri-chondral membrane as well, without pus or polypoids. This condition can only be diagnosed by a very searching and

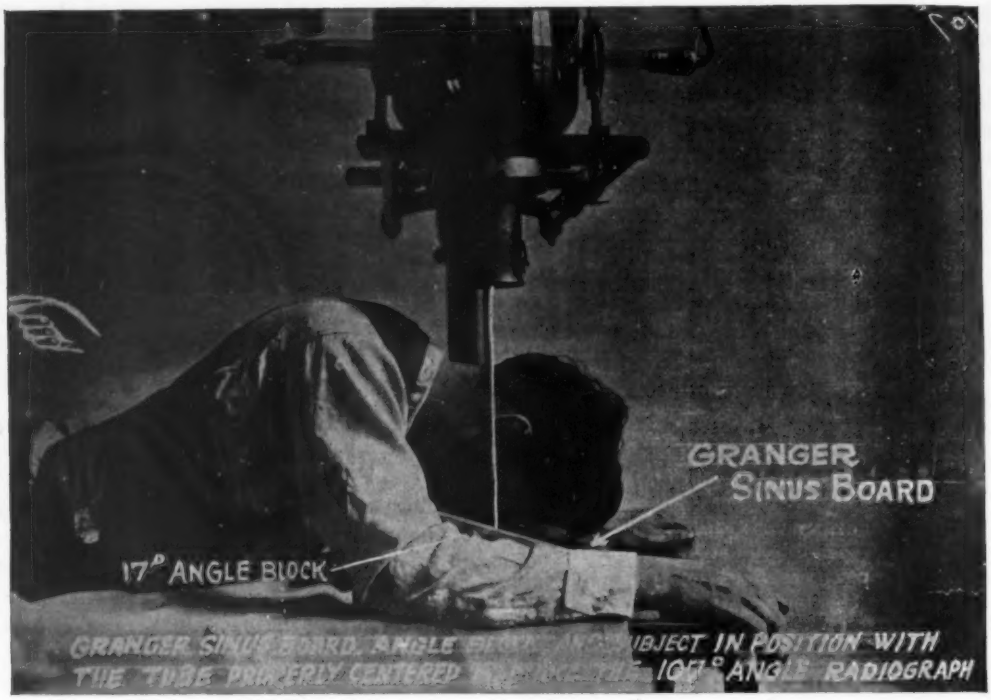
painstaking examination made by a competent rhinologist or by careful interpretation of radiographs made by our method. It is only in such radiographs that the diagnostic sphenoid line which we have described and the anterior, upper portion of the sphenoid sinuses situated below the optic groove can be clearly seen and identified. No appreciable changes in density are present on radiographs made by other methods because of the absence of pus or polypoids in these cases of hyperplastic sinusitis, and therefore this condition cannot be diagnosed from their study.

If, as is often the case, these patients see an ophthalmologist because of eye symptoms, such as scotoma or defective vision, or if they consult an oto-laryngologist, diseases of the ethmoid-sphenoid district is invariably suspected and a thorough rhinological and radiological examination is usually made.

But in the majority of instances these sinuses are not suspected and these patients become chronic sufferers. We have seen a number of such cases which continued to suffer from their headaches, neuritis, or arthritis, etc., after the removal of all, or nearly all their teeth, and in at least two cases after the removal of the appendix, being promptly cured or markedly improved by appropriate treatment of their diseased sinuses.

Last year the principal technician in our department at the Charity Hospital had what was diagnosed by the admitting officer as influenza. Following this attack he was confined to one of the hospital wards for nearly three months with attacks of fever and swelling of different joints. Shortly after the onset of his illness, because he had pyorrhea with pus pockets at the roots of several teeth, these were extracted and the pyorrhea treated with little or no improvement in his condition. During the fall and winter months he had occasional flare-ups in one joint or another, but as he followed faithfully the diet and treatment which had been prescribed he got along fairly well without being absent from his work for more than a day or two at a time. About two months ago he was taken ill in the same manner as last year, severe headaches and temperature 104°. A diagnosis of grip was made. On the fourth day his temperature was only 99½°; on the next day it rose to 101° and his ankles became badly swollen and very painful. When on the eighth day he was able to drag himself to the hospital, radiographs of his perinasal sinuses were made and a careful study of these showed bilateral sphenoid-ethmoiditis with pus. Dr. Fuchs saw him, confirmed the diagnosis and washed out pus from both sphenoid-ethmoid districts. His condition improved at once, and two days later, after a total absence of only ten days, he was back at work where he has been continuously since. He is still under treatment and occasionally complains of headaches and pains in some joint, but his improvement was little less than marvelous and he has not lost a day since his return to duty. We plead guilty to the fact that we overlooked his sinuses last year, and we are thoroughly convinced that they were at that time just as they were recently, the source of focal infection and failure to treat them was responsible for his protracted illness last year.

One of our confreres, a member of this society, had several attacks of arthritis due to the presence of pus in the frontal and maxillary sinuses, which were always relieved by the irrigation of these sinuses. About four years ago one of his knees was attacked, but this time the usual relief did not follow irrigation of his maxillary sinuses and he was advised to come to us for radiographic study of his sphenoids and ethmoids. The radiographs showed pus in his left spenoid and prompt relief of the arthritis followed the irrigation of the spenoid from which quite a quantity of pus was washed out.



We made the diagnosis of hyperplastic sinusitis in three patients suspected of having brain tumors who were sent to us for radiographic examination. All three were markedly improved after treatment of the sphenoid had been instituted.

Besides headaches and arthritis, we have seen cases of optic neuritis, neuralgia, asthma and hayfever due to infection of the sphenoids and ethmoids promptly cured or improved by the treatment of the diseased sinuses.

CONCLUSION.

After four years of experience and observation we feel justified in suggesting that you examine the sphenoid and ethmoid sinuses in all cases of neuritis, arthritis, severe headaches, etc., after the more common sources of focal infection have been excluded and before the extraction of dead teeth that do not show definite evidence of apical abscess on the radiographs.

And that you be especially suspicious of diseases of the sphenoids and ethmoids in patients complaining of one or more of the following symptoms: Hemicrania, morning headaches, pain at the junction of the head and neck posteriorly, dripping on the posterior pharyngeal wall, and pain to the inner side of or behind the eyeball.

DISCUSSION.

Dr. Homer Dupuy (New Orleans): Not so many years ago the sphenoid sinus was a "noli me tangere," a do-not-touch-me of surgery. Its anatomical position makes it inaccessible to ordinary methods of instrumental approach. Its relations to such structures as the cerebrum, the cavernous sinus and internal carotid artery, inspired a proper respect for this remotely situated cavity. We might now ask ourselves, "Quo Vadis, whither art thou going?" Well, we are now reaching out for a better appreciation of the part played by the sphenoid in focal infections. We are especially reaching out for more accurate and dependable methods of diagnosing pathological changes in this sinus. No one has done more to try and shed light on this diagnostic element of the question than Dr. Granger. After all, the whole matter hinges on a certain and reliable method of diagnosis. Without this our surgery, which is now quite bold enough, must ever re-

main purely exploratory. Dr. Granger's work marks a decided step in the x-ray diagnosis of chronic sphenoiditis. He certainly seems to be on the right track. I may not have his complete faith in the infallibility of his method as it applies to every case, yet it has helped me in many cases to solve some very difficult problems. I agree that the sphenoid sinus is more frequently involved than we suspect.

Dr. Val Fuchs (New Orleans): I think Dr. Granger is to be congratulated, not only on his technic of taking the sphenoids, but on the fact that the sphenoid has proven to be so clearly a source of infection. I believe the reason that we have never found sphenoidal infection before is that the Ear, Nose and Throat men themselves could not make the diagnosis of the hyperplastic condition—they would simply make diagnosis of empyema. It is quite a different thing to have a hyperplastic condition. In empyema we can see the pus come down from the natural opening or we can instill saline into the sinus and examine for pus. In a hyperplastic condition we have no pus. With the ethmoid hyperplasia we can see some polypoid degeneration, but not so with the sphenoid. In the case Dr. Granger mentioned: the man had no surgery. He had suction for the first three or four days, followed by placing of Douglas tampons of argyrol (10%). Pus was gotten high up in the nasal field between the middle turbinate and the nasal septum. Just to show how hard it is to make a diagnosis I will cite a case. About three years ago a patient from New Orleans went up to St. Louis and spent three weeks, where an attempt was made to determine whether or not the case was a sphenoiditis or a spheno-palatine ganglion neurosis. The ganglion was finally injected with alcohol. The man's symptoms returned. X-ray by Dr. Granger showed hyperplastic sphenoiditis. Since then he was operated on and a hyperplastic condition found. He had one attack of neuralgia about three days after operation. The technic Dr. Granger uses is so much more valuable to us than Pfahler and Pirie's taking of the sphenoid, particularly where we have a turgescent and foggy inferior turbinate, for this condition will unquestionably show the sphenoid area cloudy by these two methods.

Dr. M. Earle Brown (New Orleans): Ophthalmologists can appreciate Doctor Granger's contribution to radiology, especially is this true when surveying the eyes of patients suffering from the sphenoid syndrome (severe pain described as originating over the eye ball, extending to the forehead thence to the center of the head and finally to the back of the head and to the nape of the neck with a duration of from twenty-four hours to three or four days.

Most of these patients enjoy normal vision, but have diminished color acuity (central) for red, green, and blue.

The peripheral field studies show concentric contractions for form and colors, blue, red, and green, and are generally bilateral the greatest contractions are upon the side of the lesion in the sphenoid.

During a symposium recently held by the Ophthalmological and Oto-Laryngological Society of New Orleans, held at the Eye, Ear, Nose and Throat Hospital of which I was the conductor, twenty-seven cases were reported by me of chronic hyperplastic sphenoiditis, where the diagnosis was confirmed by radiograms using Doctor Granger's method, twenty-five of these studies were made by Dr. Granger.

My files now contain fifty cases of chronic hyperplastic sphenoiditis all confirmed by the X-ray. The unilateral ones are especially interesting because the radiogram shows the lesion in the sphenoid upon the side of greatest contraction.

The Granger line has been the means by which many unfortunate sufferers were given permanent relief.

Dr. Jos. D. Martin (New Orleans): I am the confrere referred to by Dr. Granger in his excellent paper tonight.

A diagnosis of sphenoiditis was made on me by him. Since having my sphenoid washed I am very much better; have gained seventeen pounds in past nine months and suffer but slight attacks of rheumatism at intervals.

A lady came to me with history of headache for 35 years. I diagnosed sphenoiditis and requested a picture by Dr. Granger. She said she had pictures by everyone but Dr. Granger and doubted if he were better than the others. I told her that unless Dr. Granger confirmed what I suspected I could not treat her.

She finally went to him and had my diagnosis confirmed. A large opening was made into the sphenoid, which was found to be completely closed by scar tissue from previous surgery. Suction was used and her headaches left her for a year when she returned and I enlarged the opening which was closing. Since then I have repeated the operation and she has been entirely free from headaches.

Dr. Amedee Granger (closing): I fully agree with Dr. Dupuy that the diagnosis of hyperplastic sphenoiditis is very difficult indeed to make by the routine rhinological examination, and it is for that reason that it should be supplemented by a radiographic study.

Our experience has convinced us that it is the most frequent type of sphenoiditis, and that this hyperplastic condition is responsible for the majority of the neurologies and neuritis in the head and neck. This diagnosis can be made almost invariably by a careful study of a good radiograph made in our position. We have studied a number of cases at the hospital by the methods of Pfahler who places the film in the mouth and directs the rays through the vertex; of Pirie who causes his patient to place the mouth held wide open on the film and directs the rays through the vertex and at the angle which will project the shadow of the sphenoid into the open mouth; of Hirtz of France, who places the chin of the hyperextended head on a film and directs the rays through the vertex; and found that our method gave the best results.

SURGERY OF THE PERITONEUM.*

E. M. HOLDER, M. D.,

MEMPHIS, TENN.

Surgery of the peritoneum is interesting, and it is age-old. Alonzo C——— in the early history of medicine advocated the use of opium, as you know, and it passed down through the archives of medicine and surgery, as so many so-called facts which have a spark of truth in them, and has been repeated from time to time in the new editions of works on surgery. Of course, that was erroneous; we do not believe that opium should be given today in any inflammation or infection of the peritoneum. But these errors creep into medical history and are rehashed from time to time. I do not suppose that all the gentlemen here would agree with me that they are errors, but that illustrates the idea expressed by some that every text-book in medicine ought to be burned, allowing us to start all over again. Alonzo C——— advocated the use of salines, and so did Lawrence Tate.. Who gives salines today for infected peritoneum? Nobody. Lawrence Tate thought he had a 100 per cent. cure for infections of the peritoneum in salines. That is another error.

*Read before the Mississippi State Medical Association, Jackson, May 11-13, 1926.

It might be well to begin the discussion of this subject by speaking of the anatomy and physiology of the peritoneum. The peritoneum, as you know, is a serous membrane made up an endothelial coating and a basement membrane. That is the anatomy of it. Its physiology is excretory and secretory. That is enough. One would not think in looking at the human frame that the peritoneum represents a little more surface area than the skin on the surface of the body, a little more than 17,500 square inches. Every organ of the body is covered by peritoneum and when it is stretched out it is an enormous surface to excrete and secrete—and that causes the trouble. None of the organs are lying in the peritoneum, they are all outside of it, but they are covered by it and, anatomically speaking, are extra-peritoneal.

Now what happens when the peritoneum becomes invaded, when it is insulted? There is no such thing as an etiologic infection of the peritoneum; it is traumatic. These infectious bacteria damage the peritoneum and it is traumatic in that sense. The peritoneum absorbs very slowly, and as we go along with the physiology we can understand why it is valuable that the peritoneum will not absorb exudates except very slowly. If it did not we would all die of peritonitis because of the amount of toxins we would absorb; but Nature comes to the rescue and when the peritoneum is inflamed and an exudate is thrown out, the lymphatics and blood vessels are involved, but it is amazing how little the peritoneum will absorb in this diseased condition, and yet in its normal state it is wonderful how much it will absorb.

Now this membrane which has power to secrete, a protecting membrane and an absorbing one, what are we going to do with it? It is really the defense of the abdomen. We all know how a man will have a chill, high fever, a drenching sweat, from a little infection of the biliary tract, or of the kidney; but the same amount of infection in

the peritoneum would probably produce no reaction whatever except a little rise in temperature. We all know that the prick of a needle in operating certain kinds of peritoneum has more dangers for you than the general infection has for the patient. That is because of the wonderful excretory and protective powers of the peritoneum.

The logical reasoning then is along the line of what Nature does—that is what we should follow in the treatment of these conditions. When a fistula goes through the duodenum it immediately contracts and for five or six minutes nothing can get out of the stomach—some say as long as two hours. That is what happens when this inflammation begins, there is a contraction of the peritoneum, of the fistula, and there is an attempt to shut off everything in the way of infection and poisoning. What kills the patient in infective peritonitis? Is it the toxemia, is it bacteria? Is it not the same thing that kills in intestinal obstruction, when poison is generated in the duodenum and upper jejunum? I think it is. The ordinary infections and bacterial poisons that occur in the peritoneum are not dangerous; the peritoneum takes care of them. But when you get an infection of the peritoneum that is sufficiently extensive to produce infectious obstruction, then you get a generation in this toxic zone of a poison that is intense and a menace to human life.

What do you think about the ureteral tube? A tube has been put in the duodenum and poison generated in the peritoneum and patients have recovered. It is not the poison in the peritoneum that kills the patient; it is the poison above. Several operations have lately been devised, for instance, introducing about midway in the ileum a 20 to 24 French catheter, held in the gut by a double purse-string suture and brought out through the incision, and through that tube the gut is irrigated every two hours with water and a saline and one or two ounces remaining in the gut. Then others have gone further than that and have done a jejunocolostomy in which the transverse colon is anastomosed and an opening made and drainage secured from the colon to the jejunum. Some have done not only a jejunocolostomy, but they have introduced into the cecum a Paul's tube, getting all the drainage possible through this tube in addition to the jejunocolostomy. That is not all. Others have thought that infection gets into the human system through the lymphatics (and it does largely, but not altogether), and that the drainage of the thoracic duct and the left side of the neck would obliterate this poison before it has time to affect the patient, and just as soon as ileus begins an opening is made in the neck, the thoracic duct is opened and drainage is made through the neck. Experimentally that has proven satisfactory in dogs. The appendix and mesentery have been tied off, but in all cases these dogs have died except where the thoracic duct was drained. But humanly speaking, it has not been very satisfactory. Several hundred cases have been tried, but it is rather a tedious process and one that you hesitate to undertake unless you are familiar with the anatomy of the thoracic duct, which is very small and straw-colored and very yielding, and when you come in contact with it, unless you know just where it is anatomically, you sometimes do not get it right. That probably precludes it from the service of the average surgeon, and certainly from that of the internist who has to deal with these cases first.

Now what has to be done? Nothing very astonishing. The poison is taken up from the duodenum and upper jejunum and through the peritoneum in general passes into the blood stream, and the idea is to head it off before it gets into the blood stream—divert it. What is a practical way to do that? The first plan was the Ochsner plan. Up to that time he had lost almost 100 per cent. of patients, so he devised the plan of putting the patient in the Fowler position, giving him proctoclysis with

saline solutions, nothing by mouth, absolutely, not even a drop of water. The patient was made fairly comfortable and in that way he saved 20 per cent. of patients who were operated afterwards. Our late esteemed and wonderful teacher, John Murphy, followed the same principle, except that he advocated operation in cases where you could locate the focus of infection. Ochsner did not even want to do that; he thought if the infecion was generally diffused you had better stay out. Murphy proposed a little more modern plan, and that was to arrive at a conclusion if you could as to what the focus was in the particular case and eliminate that, so that the feeding of bacteria into the peritoneum could be stopped, and then go ahead with the Murphy plan.

What do we think about all that? To begin with, many of the modern writers tell us that proctoclysis is not proper, that it increases the pain, increases the peristalsis, and you know you do not want to do that. That is Nature's way of curing these conditions and if you interfere you will get into trouble. Proctoclysis increases pain and peristalsis and extends the avenues of infection because if it is not absorbed at all it irritates the colon. Why do you want to inflict the patient with proctoclysis when you can get the same thing under the skin and be sure it is absorbed, as many as 4,000 cc. a day—in 24 hours. The patient needs water, but why depend upon proctoclysis which is very uncertain? Why not get away from the Ochsner plan?

What about the opiates? They are all right in the beginning, but to use them as Crile does. He cannot get the nurses to give opium—he has to give it himself. They are afraid to do it, so I am told. When you do that you are interfering with the defensive properties of the peritoneum. In other words, putting the peritoneum out of commission. Those who have given thought to this subject say it is not a good thing.

What about the Fowler position? They all agree that that is the proper position, because they say along the diverticula the peritoneum is more sensitive to infection and the longer the patient can be kept quiet the better.

How about purgatives? No one gives them now. What about feeding? It is absolutely taboo.

But you have a patient on whom you have not operated, and the patient is getting worse. You are a surgeon, and it is sometimes harder not to operate than to operate. My contention is that you should operate, and operate before your patient has a diffuse septic peritonitis. Someone has said that it is safer to operate a diffuse septic peritonitis than a gangrenous appendiceal abscess. Murphy told us that. He told us that when these adhesions begin in the spleen, when you break them up you get an exudate, and when you open the lymphatics the chances for infection are enormous. I read a few days ago where a prominent surgeon said that there is more danger in taking out a clean appendix in the presence of blood clot in the abdomen than a gangrenous appendix without a blood clot. That is reasonable, because in the gangrenous appendix without blood clot you have no nucleus for infection, and with the clean appendix, if you will examine the forceps, or the sutures, microscopically, you will find bacteria, and bacteria with the blood clot will do more harm than bacteria from a gangrenous appendix without a clot. My contention then is to operate early.

What is the plan of interference? A quick operation through a small incision, walling off the appendiceal abscess, or taking it out, very little drainage, practically none—in most cases you do not have to drain at all. I am not advocating the absolute abandonment of drains, but they have done a lot of harm and have produced adhesions and obstruction and sloughs, so that surgeons today are tending to get away from drainage of the abdomen. Quick

operation through a small incision, no manipulation whatever. If there is any pus in the pelvis, let it alone; it is bactericidal. If the gut is infected put a hole in it and put in a tube, and quit at that.

But suppose you find pus down in the pelvis and above you find bacteriological serum, what will you do? Both Ochsner and Murphy would make an opening in the abdomen and put a drain in the pelvis, but it did not do any good. The thing to do is to reduce abdominal pressure, and when you do that the patient shows improvement. Blake said he could save more patients by putting the tube into the mouth of the small gut than by any other drainage. Avoid multiple drainage tubes; avoid getting between the coils; and infection—let that alone. Simply put in this one tube in order to reduce the intra-abdominal pressure, and if you do not want to do an operation put a tube in the peritoneum and drain so as to prevent ileus from killing the patient.

DISCUSSION.

Dr. E. C. Parker (Gulfport): We have listened to a very able lecture on the peritoneum. I want to thank the doctor for the good thoughts he has given us. The only comment I have to make is that he did not lay enough stress on the excessive amount of fluids needed for the patient to help dilute the toxins. I believe in giving fluids, intravenously if necessary, proctoclysis, or any way to dilute the toxins, and I am rather partial to glucose and soda proctoclysis to combat the acidosis that is set up in a great many of these patients. That is the great thing—dilute the toxins and prevent acidosis.

Dr. M. L. Flynt (D'Lo): It is with a great deal of hesitancy that I attempt to discuss a paper read by such an eminent surgeon as Dr. Holder. But I would like to say that Dr. Holder has brought a very favorable paper and there are two points in his paper which I wish to stress. The first is the use of hypodermoclysis. In this condition these patients are usually begging for water and their tissues are depleted and we believe that hypodermoclysis is the best and the quickest method of putting fluids into the tissues. The next point is the use of the duodenal tube. I believe we save many of these patients by this procedure. You can never tell what is going to happen when you go into the abdomen. I heard my friend, Dr. Shands, make this remark once and it made an impression upon me: "You may go in for just a simple appendix and your patient have peritonitis or post-operative ileus and give you a great deal of distress and it is in these cases that the duodenal tube serves its purpose and many times I believe we can prevent these distressing post-operative conditions by simply passing the tube down into the stomach and leaving it there for several hours and allowing the patient to drink water and at the same time let it syphon back through the tube, it will at least give a great deal of comfort to the patient and many times I believe save our patients." I thank you.

Dr. H. A. Gamble (Greenville): Everything that can be done for the alleviation of an infected peritoneum should be done. There are a few measures, however, which I have found have given us much better results than we formerly had from the use of the generally accepted methods of treatment, and particularly do I wish to refer to the question of posture. I believe, as Dr. Holder says, that if drainage does not keep up any length of time thereafter, the best thing is to place the patient in position in which everything in that abdomen will be drained out at once, and if you take the Fowler position you cannot drain the pelvis, not having the lowest point below the point of drainage. If you turn the patient over flat on the abdomen you will drain everything in there. I believe I have gotten good results by adopting this measure, and we do it as a routine in all cases of general peritonitis.

Another thing is the intravenous use of glucose solution. I do not know of any measure that is more life-saving in any toxic condition, whether general peritonitis or obstruction, than the use of glucose intravenously, depending upon the condition of the patient whether a 10 per cent. solution or a 5 per cent. is used. It is the best diuretic we have, and we have adopted it as a routine measure in peritonitis; before the patient leaves the table the glucose solution is started.

Another feature is the use of the duodenal tube. These three measures as additions to the treatment of general peritonitis or any intra-abdominal lesions associated with toxaemia, add very materially to our success in the treatment of these conditions.

Dr. M. Q. Ewing (Amory): I regret that Dr. Holder did not have time to finish this subject. It is a subject that every surgeon is interested in. We probably lose more patients from peritonitis than any other cause.

One thing I would like to add to what Dr. Holder has said is that wherever possible in peritonitis do your operation under local anaesthesia, and the extent to which you can operate under local is far greater than the medical profession as a whole believes. There are very few intra-abdominal operations that cannot be done under local anaesthesia. Of course there are some few, and those we have to consider. If you operate for general peritonitis under local—you do not always know what you are operating for,—that is, the cause, and you can start under local, and if you find something that cannot be handled that way you can go on to a general anaesthesia. The reason I believe this is because more than 80 per cent. of deaths from peritonitis are directly the result of ileus and alkalosis with it, which you attempt to combat with hypodermoclysis and the duodenal tube. This ileus sometimes develops after going into the abdomen under general anaesthesia, but it is more likely to occur in the presence of peritonitis. Ileus is not so common under local as under general, so I would advise the local as an additional factor of safety in these cases.

Dr. Carroll W. Allen (New Orleans): It is indeed a great pleasure to have discussed the classical literature on surgery of the peritoneum and I heartily endorse everything Dr. Holder has said.

It is immaterial we find whether we use glucose or salt in our hypodermoclysis. These are details the doctor could have elaborated if he had had time.

We have made some very intensive studies of this condition in New Orleans and there will be something in press shortly from myself and associates on duodenal dilatation in this condition. We found that the higher up the intestinal tract the obstruction takes place, the greater the toxicity. That is a fact that is not original with us but has been well demonstrated by others.

Dr. Flynt in discussing the use of the Jette tube in the stomach spoke of giving the patient water to drink. That is a mistake,—to give them water. Put the Jette tube in and allow it to remain, but no water. You will get a certain amount of reverse peristalsis from the duodenum which you can siphon out, but never put water in. If Dr. Holder's idea is to give water by means other than the bowel, I think that is correct.

We have reached the time in medicine where we are giving more and more thought to the fundamental things that are at the basis of medicine. The men who went to school in my time did not know much about physiology and physics and chemistry; we are badly handicapped. The men today we insist must have a certain fundamental training, a certain time spent in these branches. One of the greatest books written by anybody is Hilton's "Rest and Pain." You will notice that every one of the pathological processes taking place in nature is a splint—that is what Nature does in peritonitis, and that is why Crile in his great physiological survey says his opiates are a therapeutic splint for the abdominal cavity. Nature throws out an exudate around the peritoneum; wherever the peritoneum comes in contact with something it splints the endothelial cells. There is very little absorption. The mouths between the endothelial cells and the lymphatic channels are closed and absorption does not take place. These pockets are very aseptic. Very often going into acute peritonitis early you find fluid. It is not pus, it is leucocytic fluid. A little later this fluid between the coils may be sterile.

I do not believe in drainage unless you are confronted with serious and radical infection, and then by the smallest possible stab wound. The fact that nature has splinted the abdominal cavity means that there is very little in any chance for an opiate, and if you will do what you can to keep peristalsis inside you will get better results.

You will find that Hilton's book, "Rest and Pain," and the thought Dr. Holder has brought us will go hand in hand.

Dr. E. M. Holder (closing): I saw a little monograph by a man, who probably is the outstanding surgeon of England today, if not of the world, in which he said: "I have never seen in my experience a patient die of appendicitis who did not have purgatives, food or water." That is a pretty broad statement, but if it is true then we ought to have 100 per cent. recoveries. But here is what happens. Before you are sent for the mother gives the child castor oil—the very thing she should not do. We did not know that for a long time. Then she gives the child food, which keeps up the peristalsis; and water, which also aids peristalsis. Nature is trying to shut off and localize the abscess, and she is doing everything possible to spread it. The surgeon did not mean that these cases do not come to operation, many of them, but they are localized abscesses, and all you have to do is to make a little incision, take out the appendix, and the patient gets well.

These attacks in the upper abdomen that bring about peritonitis require surgical interference—cholecystitis, acute pancreatitis, duodenal ulcer,

etc., all require prompt surgical interference. Do not wait for peritonitis; do not wait for the ulcer to shoot out—begin before the diffuse peritonitis comes on. I would not close the abdomen with a lot of gastric contents, blood or feces, but I would close it with serum and pus and anything else that is thrown out by nature, except ruptured viscera. A man who closes the abdomen with a blood clot in it, even in ectopic pregnancy, is a tyro. You can flush them out, make everything perfectly sterile and they will get well, but leave a clot of blood in there and that is all you need for a culture medium. Get the pelvis clean.

Further on down in the pelvis the peritoneum is not closed in the female. It is closed in the male, but in the female you get pus tubes and things of that kind. That is not emergency surgery; let it alone. In puerperal streptococcic infection no surgeon can operate; let it alone and it will localize and then take out the pus tubes, close up without drainage, and you will not have a reaction of any kind. If it is tuberculosis, let it alone. Pneumococcic infection—let it alone. It will take care of itself until you get a localized abscess, maybe. Infection from malignant disease—the focus of infection must be removed, and unless you can remove the focus of infection the peritonitis is usually secondary to the original cancer.

What are you going to do for your patient? Tell him what the condition is, when you have any knowledge of the origin of infection. If it is ulcer, close it up; if it is an appendix, take it out. Make a small incision under local anaesthesia, if you like, but I would rather have general. Make a small incision without traumatizing and bruising the tissues.

MULTIPLE CARPO-METACARPAL DISLOCATIONS.

WITH THE REPORT OF A CASE.

WALDEMAR R. METZ, M. D.

(*From the Surgical Service, U. S. Marine Hospital No. 14.*)

NEW ORLEANS.

Complete multiple dislocations of two or more of the metacarpal bones at the carpo-metacarpal articulations are unusual entities. Despite the frequent accidents to which the hand is subjected by reason of its manifold activities and its almost constant exposure to violence, this variety of trauma is rare. In a review of the literature of the subject, one is immediately impressed by its paucity and by the scant number of cases which have been recorded. A rather extensive investigation indicates that complete dislocation of the metacarpal bones is met with very infrequently.

Fig. 1—Lateral view, before reduction.

Isolated, individual dislocations of each of the metacarpal bones, with the exception of the fifth, have been reported, the first metacarpal most often. This paper is confined to the discussion of complete backward, dorsal displacement of the four inner metacarpals,—second, third, fourth and fifth, with the report of a case.

Stimson, in his textbook on Fractures and Dislocations, cites but four instances where this condition was met, three by other authors and one case in his own experience. Besides these I have been able to find but two more, one by McLean (A. M. A., 1922), and one by Carter (Wis. Med. Jour., 1924). It is of course entirely possible that there are a few others, classed under different headings, which I was unable to locate, but at best the incidence must be very small. This makes but six cases previously reported, and with the addition of my own case, which I shall presently describe, the total reaches seven. Of the six case-reports three appeared in foreign journals and three in the medical

press of this country. Five of the seven were backward, dorsal dislocations: two were forward displacements.

Considering then, the commonplaceness of injuries to the hand, one naturally asks for an explanation as to the infrequency of this condition. The essayist is of the opinion that the answer is to be found entirely along anatomical lines.

Fig. 2—Lateral view following open reduction.

The metacarpal bones form the framework of the hand. They are curved slightly toward the palmar surface, and their narrowest diameter is at about their middle. They articulate at their bases with the bones of the carpus by an intricate, multiple faceted arrangement which makes this articulation one of the firmest and most secure in the body. Furthermore, these bones are bound into a unit by a web-work of interosseous muscles, which permits little individual bony movement. To the bases of most of them are attached extensor and flexor tendons which further stabilize their position. Because of their bowed nature and the fact that the weakest portion is at their mid-point, and because of the firm articulation at the carpus, any pressure exerted upon the heads of these bones results usually in fracture, the break taking place at the point of least resistance, which is the middle of the bone.

It seems necessary, therefore, that to produce this character of injury, the hand must be in the position of flexion, the force being directed backward and upward. Another factor, perhaps, might be a predisposing weakness, or subluxation at the articular junction. This view seems to be warranted by the fact that recurrence appears to be the rule, rather than the exception.

CASE REPORT.

History—The case to which I wish to invite attention is that of a male adult, Mr. A. V., aged 33 years, a native of Chile, and a seaman by occupation. He was admitted to the U. S. Marine Hospital on June 1, 1925, presenting an injured hand and giving the following history: At about noon of the same day of his admission, while at work on his ship, he jumped into a hatch which was covered with tarpaulin, and which he thought was supported beneath by boards. No boards were present, however, and the patient fell into the hold, striking with great force on his right hand and side. He did not recall the position of his hand when he fell. His chief complaint on admission was great pain and swelling of the right hand, inability to move the fingers and pain in his back nd right hip.

Physical examination—There was nothing in his general examination bearing on his present trouble. The right hand was swollen to three times its natural size, the swelling being more pronounced on the dorsum, but also quite noticeable on the ventral surface. Voluntary movement of the fingers was impossible and passive movement was very painful. Examination of the dorsum of the hand revealed a very definite and distinct ridge or elevation corresponding with the bases of the second, third, fourth and fifth metacarpals which apparently lay over the first row of carpal bones. There was exquisite sensitiveness on pressure over this protrusion which was entirely immovable on manipulation. No crepitus could be elicited. The wrist motion was undisturbed.

Roentgenograms read by Doctor E. R. Bowie showed a backward dislocation of the entire carpus.

Closed reduction under anesthesia was attempted without success on two occasions, once by my colleague, Dr. E. S. Hatch, and once by myself. Open reduction was then decided upon as the only logical procedure, the bases of the metacarpals being apparently hooked over the first row of carpal bones.

Operation—There being no standard approach described for this condition, the operative tech-

nique was improvised to meet the existing conditions. A U-shaped incision was made, with its convexity toward the arm, about one-inch proximal to the dislocated bases of the metacarpal bones, and the skin flap was thrown over the dorsum of the hand. The soft tissues were incised in a curved direction about one-half inch distal to the line of skin incision so as to prevent healing of the operative wound in the same planes and in an effort to avoid cicatricial contracture which might affect ultimate function. The hand was forcibly flexed by an assistant and the carpo-metacarpal joint exposed. A flat, wide, bone skid was inserted diagonally between the base of the fifth metacarpal and the bodies of the unciform and pisiform bones with the idea of reducing all four bones en masse and not interfering with their integrity as a whole. Using these two bones of the carpus as a fulcrum and including the bases of the other three metacarpals, leverage was firmly made, and after several attempts, complete reduction was secured. Closure of the soft parts was made with interrupted sutures of chromic No. 1 cat gut, alternate silk worm sutures and 00 chromic cat gut for skin approximation. Drainage was not used. An anterior and posterior molded plaster of paris splint was applied for purposes of immobilization. Skiagraphic report the following day showed complete reduction.

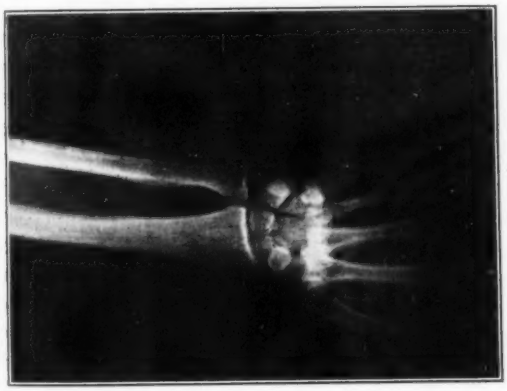


Fig. 3—Anterior-posterior view showing dislocations before reduction.

The wound healed by primary union. The silk worm sutures were removed on the sixth day. The hand remained swollen for some two weeks, the patient still complained of pain on attempted motion of the fingers, which I interpreted as being caused from injury to the tendons, with consequent inflammatory exudation into their sheaths. Passive motion of the fingers was begun early, as was physiotherapy in the form of dry heat, but intense physiotherapeutic measures

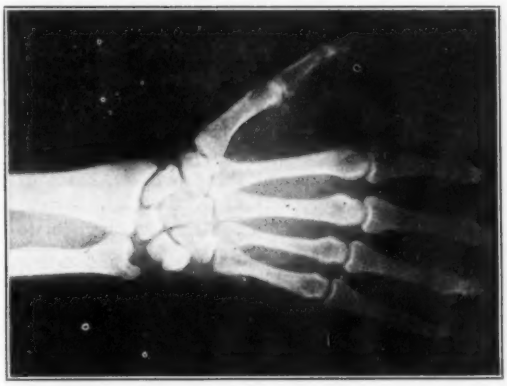


Fig. 4—Anterior-posterior view following open reduction.

were not attempted as early as indicated, for fear of bringing about a recurrence of the dislocation, such as that noted in previous case histories.

The patient remained under observation for some five months, with no recurrence and when last seen had about completely regained the function of his hand.

BIBLIOGRAPHY.

Bergasse and Guilman. Arch. gen. de Chir., Par. 9:1169-90. 1915.

Carter. Wis. med. journ., 23:196-98. 1924.

Hamilton. In Stimson, Fractures and Dislocations. 1910. p. 724.

Lyman. Ann. Surg., 43:905-06. 1906.

McLean. Jour. A. M. A. 79:299-300. 1922.

Stimson. Fractures and Dislocations. 1910. p. 724.

Tillaux. Bull. de la Societe de chir. 1875:415.

Vigouroux. Bull. de la Societe anatomique, 1868:587.

DISCUSSION.

Dr. O. C. Cassegrain (New Orleans): It is with considerable interest that I listened to Dr. Metz's admirable paper.

Its great attraction was not only the very excellent result he obtained, but also the fact that it dealt with such an unusual surgical entity.

It is deplorably true that not enough of the rare cases seen in medicine are reported. This is partly due to timidity on the part of some, and partly because having but one or two cases to report others do not deem it wise to report them. The whole profession is thus at times deprived of very useful knowledge.

I am sure we are all indebted to Dr. Metz for reporting this case to the Society. His description of how he solved the problem that confronted him and of the technique he followed in reducing this formidable type of dislocation was most clear and forceful and must be of great value

to any of us if we are ever called upon to treat such a condition.

But I think the chief lesson to be learned from his paper is this: That we must not lose too much time nor traumatize further an already badly traumatized hand by strong efforts at closed reduction. The articulations of the hand are so strongly knit and the fruitless efforts of two experienced surgeons (Drs. Metz and Hatch) should teach us that if after one or maybe two trials under anesthesia we fail to reduce the dislocation, we should no longer traumatize the hand but work at once to the open reduction as performed by Dr. Metz.

I agree with the essayist that the reason why this type of dislocation is so rarely seen is due partly to the peculiar anatomy of the metacarpal bones and also to the fact that to obtain these posterior locations you must have the hand fixed so that the force may be transmitted upward and backward. Now this is a very unusual position for the hand to be, in a fall, for instinctively we extend the hands, palms down, to protect ourselves when about to fall.

During my five years, from 1921 to the present, when I have been in charge of the out-door colored surgical clinic at Charity Hospital, I have not seen a single case of posterior carpo-metacarpal dislocation. In looking through the records of the hospital (out-door service) from 1918 to present, I failed to see a single case recorded.

I wish to congratulate Dr. Metz, first for presenting this rare case and secondly for his magnificent result and also the membership for their good fortune in having reported such a rare surgical condition.

INCREASING INSANITY IN THIS COUNTRY AND WHAT SHOULD BE DONE TO PREVENT IT.*

JNO. N. THOMAS, M. D.,
PINEVILLE, LA.

I have been frequently invited by the membership of this splendid Medical Society to read a paper at one of its meetings and it now gives me pleasure to accept your invitation. This paper deals with such an important subject, one much in the minds of the people of the state at this time, that I have endeavored to present facts and figures in order that you may get a better understanding of the subject and it may therefore be a little longer than the average medical paper, but I hope you will bear with me to the end of its reading.

I have been Superintendent of the Central Louisiana State Hospital for nearly eighteen years and have had the opportunity of seeing and studying mental disease in all of its aspects. I have seen this institution increase in population from 404 in 1909 to 1140 in 1926:

Population of the Hospital, Jan. 1, 1909	404
Admitted from Jan. 1, 1909, to May 24, 1926	4,329
Total number under treatment	4,733
Of these, 2,534 were discharged or 53.5%	
Of these, 1,030 died, or 22%	
Of these, 1,130 remaining, or 35%	
On hand Jan. 1, 1909	404
On hand May 24, 1926	1,130
A gain of 728, 179% increase, or an increase of 10.9% per year	

These figures will indicate to you the rapid increase in the number of the insane in the thirty-seven parishes of the state that send their patients to the Pineville Institution, and it will also show you the volume of work done at this institution. I dare say that the same ratio of increase will apply to the other institution of the state at Jackson. The question for this great increase will at once arise and one that I am often asked: "What is the cause?", and I will tell you at once and frankly that, in my opinion, between sixty and seventy-five per cent. is directly due to heredity. This condition does not apply to Louisiana alone, but is common in every state in the union.

The noted evangelist Billy Sunday, who seems to have somewhat studied this question and gathered statistics on the subject, said in a lecture in Shreveport two or three years ago, that if the present rate of increase of insanity in this country, is not

*Read before the Shreveport Medical Society, Shreveport, La., July 6, 1926.

stopped, the whole American people would be insane in four or five hundred years.

The next most reasonable question to ask is: "What can be done to prevent this steady and alarming increase in mental disease and degeneracy?" There is no medical treatment per se for mental disease. Care in the way of food, plenty of it, raiment, nurseful attention, occupation and diversion through amusement are what is now being done in the best institutions of the country. But, this sort of treatment does not and never will lessen the constantly increasing number of cases. Then, what will? Sterilization will, beyond question or doubt, and it can be done without undue risk to human life and without serious discomfort or ill effects beyond the impossibility to pro-create the species. The question of the annual increasing expense to care for these unfortunate people will in itself soon compel drastic action for the relief of the taxpayer.

The segregation of the feebleminded has been talked of and recommended in some quarters, but on account of the great cost, it is out of the question. The late Dr. Evans, Superintendent of the Colony and Training School near Alexandria, told me that he estimated that there were eight thousand feebleminded in the state. I think his estimate is low, but even that number to segregate, cannot be considered on account of the cost, which would be over a million a year. Even if the cost did not make it prohibitive, the length of time to confine these feebleminded women would make it impossible. The average childbearing period of a woman is thirty years. Think of confining these women, several thousand of them, from puberty to the climacteric. It is impracticable and unthinkable.

Insanity is no respecter of person, state or condition. It invades the home of the rich and poor alike. It dethrones governments and often pauperizes the rich, either thorough profligracy of its kindred victims, or the futile attempts made at cures. Who is it that has not heard of the number of derelicts in the Hapsburg family of Austria? Who is it that has never heard of the grandiose ideas of the late Emperor of Germany? Even in speaking of the Deity, it is said that he always said, "Me and God." Does anyone think that he is a normal man? What a pity he was not sterilized at puberty, if so it can readily be believed that we never would have heard of the railroad from Berlin to Bagdad, nor have had the great war and the great German people would have been spared the loss of blood and money and obloquy, that has befallen them. He has all the symptoms of paranoia. Now follow the line of heredity: Does anyone believe that the late crown prince is fully normal, and therefore sane. He has all the symptoms of a paranoid de mentia praecox case, and should have been sterilized for the benefit of humanity.

To be specific, I have asked Dr. David H. Keller, the medical director on my staff, to prepare and give me some data on his study of heredity in our hospital, and here is his report:

I had the honor of joining your staff of physicians on the 20th of March, 1919. Since that time I have assisted in the examination at the bi-weekly staff meetings, of 2,334 patients. While the information we receive from the coroners and families was often vague and incomplete, it is my personal opinion that of these 2,334 patients at least 60% have a psychopathic family history than can be proven, and I believe that in at least 15% more the psychopathic heredity would be shown if we could obtain the actual facts. This makes a total of 75%.

On the white female service, of all the cases admitted from 1906 to 1911, we have still remaining 86 patients, who are stated to be either insane, feebleminded, or epileptic. In other words, 86 Louisiana families had 261 persons who were abnormal mentally, and a charge to the state, or an average of over three to the family.

Approximately 1700 white women have been admitted from 1906 to 1926. Of these there are still remaining in the hospital 304 patients. Of these 161 have positive heredity or 53%. These 161 patients had 313 insane relatives. One hundred and sixty-one Louisiana families have 474 insane members, or approximately 3 to a family.

Many of these families run very high in the number of defectives. At one time one family had 16 members either at Jackson or Pineville. Seventy-five of this family are stated to have been insane since the Civil War. Another family has had 15 cases in Pineville and Jackson. Among these is a mother and five of her daughters. A family has recently been reported where an old imbecile man has over 100 descendants, and everyone feebleminded.

Frequently it is very difficult to obtain the real facts due to the unwillingness of the family to disclose them. In one case a family history of insanity was denied, and only by accident did we obtain a history of 14 cases of insanity in this family, from the hospital records of another state.

Our case No. 30 had a father, mother, brother and cousin insane. Our case No. 171 had father, mother, four sisters and two aunts insane. Our case 1200 had father and mother feeble-minded, and two cousins insane. Our case 130 is an idiot. She had feeble-minded parents, one sister and one brother are idiots, two cousins insane, and three cousins epileptic. Such records could be given for many pages. These are not isolated cases, but simply gathered from the routine hospital records.

It is my opinion that no one who has worked for years among the mentally defective can help but believe in the influence of heredity as one of the main causes of insanity, feeble-mindedness and epilepsy. The demands made on the state institutions of Louisiana for the care of such cases is greater than can be provided for without the constant expanding of our institutions. Unless something is done to prevent this increase the state will be unable to finance the care of these unfortunate people. The logical thing would be to attack the problem at the source and prevent, as far as can be, the future birth of defective children, from known defective parents.

So much for the record and statistics of the Central Louisiana State Hospital at Pineville, let us read the record and statistics of the East Louisiana State Hospital at Jackson. I am permitted to do this by Dr. T. J. Perkins, the able superintendent of that institution, where over twenty-four hundred patients are now being treated. By the way, in passing, let me say that Dr. Perkins and myself working entirely independent of each other, he getting the statistics from the parishes of South Louisiana, including the City of New Orleans, and I getting statistics from the thirty-seven parishes of North and Central Louisiana that send their insane to Pineville, came within nine-tenths of one per cent. of each others figures. He getting the rate of increase in South Louisiana at 10 per cent. and I at 10.9.

I shall not consume your time by going into the various laws governing heredity, but will deal more with facts and figures as I find them on the wards and in the records and patient's histories in the East Louisiana State Hospital.

I shall deal with the economic side of the problem. The records of the East Louisiana State Hospital show that the population of that institution is increasing at the rate of 10% annually. The State of Louisiana is spending enormous amounts of money for the care and treatment of the mentally diseased, the feeble-minded and social delinquents. There has been nothing spent nor have there been any material steps taken for the prevention of these conditions. It is an unquestionable fact that the fundamentals of the mind are begotten with the body and largely predetermine character and conduct.

The Mendelian law has proven to the satisfaction of students of sociology that the fundamentals of the mind that are begotten with the body is a cellular condition that is transmitted by inheritance and one that can be controlled.

We have on the wards of the East Louisiana State Hospital today, 131 patients who bear the following relations, each to the other:

We have 16 mothers with three sons and fifteen daughters, one father and one son, one father and one daughter, 12 brothers representing 6 families, 45 brothers and sisters representing 21 families, 14 sisters representing 7 families, 8 first cousins representing 4 families, and 2 aunts and 21 nieces.

In selecting at random 746 histories of patients who are now inmates of the East Louisiana State Hospital, there was a direct history of insanity in the families of 28.4% of that number.

I have selected the histories of certain family names that have come down through the institution since its establishment. The families that I am going to give you now are a few illustrations of many that can be found in the records of this institution.

No. 1. *A white family.*

Has had 17 members in the hospital at various times since 1861; there is one member in the hospital now. Adding the total length of time spent in the hospital by the various members of this family would give 99 years, 7 months, 12 days; placing the cost of care and treatment of this family at what it is costing us today for the maintenance and treatment of this family at what it is costing today for the maintenance and treatment of these people, it would amount to $22,609.54.

No. 2. *A colored family.*

Fifteen members in the hospital from time to time since 1880, 3 members in the hospital now. Combined time spent in the hospital by the various members of this family would give 85 years, 10 months and 6 days. The cost estimated at the present rate for maintenance and treatment would be $19,425.22.

No. 3. *A white fmily.*

Twenty members in the hospital since 1878; six members in the hospital by the various members of this family amounts to 141 years, 4 months, 29 days; estimated cost to the state of caring and maintaining members of this family at the present rate of maintenance would be $32,000.68.

No. 4. *A white family.*

Eighteen members in the hospital from time to time since 1852. Six members in the hospital today. Total combined time in hospital by various members of this family, 185 years, 1 month and 1 day; estimating the cost of care and treating this family at the present day rate amounts to $41,884.72.

No. 5. *A colored family.*

Fourteen members in hospital since 1881. Three members in hospital now; total time in hospital 59 years, 1 month; cost of care and treatment $13,357.28.

Nine (9) families have had a total of 123 members in the hospital. These nine (9) families are represented in the hospital today by 25 members. Combined length of time in hospital by these families would be 677 years, 8 months and 9 days. Cost of care and treatment of 9 families at the present day rate would amount to $153,359.48.

There is one patient who has been in the hospital 47 years, 10 months and 15 days; one for 40 years, 1 month and 8 days; one for 40 years, 4 months and 2 days. The combined length of time that these patients have been in hospital amounts to 128 years, 3 months and 25 days. The cost of care and treatment of these patients at the present day rate amounts to $29,037.60.

A patient who has been here 54 years at the present day rate would have cost the state $12,220.20.

A negro man who has been in the hospital 46 years and who is hale and hearty today, at the present rate of maintenance, would have cost the taxpayers $10,409.80.

To show further that the care and treatment of the mentally diseased is an increasing economic problem, I wish to submit

these figures, taken from the records of the East Louisiana State Hospital.

The appropriation for maintenance, building, improvements and repairs for the biennial period of 1924 and 1925 amount to $1,108,839.74. The total expenditure for maintenance, buildings, improvements and repairs from 1891 to 1925, inclusively, has been $8,271,952.49.

These figures show the necessary expenditure of East Louisiana State Hospital alone and do not include the expenditure of the Central Louisiana State Hospital or the State Colony and Training School. They show conclusively that the care and treatment of this unfortunate class of people is an increasing economic problem and one that reaches the hearthstone of every taxpayer. The solution of the problem lies largely in the hands of the lawmakers of the state. The increase in mental disease and mental deficiency is partially due to the increasing population and the greater nervous tension that advancement in civilization has brought to the life of every individual; but these elements fade into insignificance when compared to the influence of social diseases, alcohol and the perpetuation of the blood lines of the mentally and physically unfit. Just so long as the laws of the state, either by failure of enactment or execution permit the last three named causes of mental disease to prevail, just so long will children, increasing in numbers, be born in the state who have been robbed at their conception, of the impelling force that drives to perfect mental and physical development.

I talked to Judge Harry Olson, Chief Justice of the Municipal Supreme Court of Chicago, on his recent visit to New Orleans, and who is perhaps the best posted layman in America on mental diseases and especially so on the relation of insanity to crime. I know that he is a firm believer in heredity and also in the sterilization of human derelicts to prevent their procreation.

All who have given this great question thought and consideration, believe that it will take about three generations, say 60 years, to accomplish big results, but all agree that a start should be made in the interest and uplift of the unborn millions of the human race.

The operation of sterilization is known as vasectomy in the male and salpingectomy in the female. Over four thousand seven hundred (4,700) cases have been operated upon in the State of California since the sterilization law went into effect without one unfavorable result.

The sterilization law is now being enforced in the State of Nebraska and from 80 to 100 operations are annually done in the state hospitals for insane in the state with not one bad result reported. The law has been recently upheld by the Supreme Court of Virginia after a test case was brought before the court and sterilization will again proceed in that state.

The statistics gotten by Dr. Perkins and myself prove beyond doubt that insanity and feeble-mindedness are increasing at the rate of 10 per cent. per annum in Louisiana.

Let us see what can be said on the subject nationally. I hold in my hand the report of Dr. Horato M. Pollock, Director Statistical Bureau, State Hospital Commission, New York, which gives the federal census report of 1923 and it shows and states that mental disease is still increasing over the entire country. The length of this paper precludes my quoting at length from this report but I will read you a few statements. In concluding his report, Dr. Pollock asks this question:

"What is the outlook for the future of mental disease?"

And his answer is as follows:

In view of the facts presented it would be rash indeed to prophesy that the promised land of mental health lies just ahead.

It seems to me that the journey to that land will be a long one and that there are some real as well as imaginary lions in the way.

Before we can expect much reduction in mental disease, we must have more research to find out what should be done and what should not be done to preserve mental health. We must have better facilities to disseminate the principles and facts relative to mental hygiene that we now know and will discover, and we must have aggressive action to put into operation the instruments of relief and prevention now within our reach.

Heredity is an immutable law of nature and this fact should never be lost sight of in dealing with the problem of the feeble-minded and the insane, and as it is the main factor in the increase in all mental disease, for the future protection of the human race, laws should be enacted and enforced to prevent the procreation of the species. Let the law be passed, and if necessary, let be tested in the courts and it can be amended if necessary, as occasion demands. Let it be thoroughly understood that the operation for sterilization does not in the least destroy the sexual function of either male or female. It simply definitely and positively eliminates the possibility to procreate the species.

Dr. J. S. DeJarnett, of Virginia, one of the best known psychiatrists of the South, makes the following statement: "If heredity, alcohol and syphilis can be controlled, we will stop building hospitals for the insane and dependents, and many of these institutions already established will be deserted in two or three generations."

In conclusion, I want to quote you the following verses by the same author:

MENDEL'S LAW.

A Plea for a Better Race of Men.

Oh, why are you men so foolish—
  You breeders who breed our men,
Let the fools, the weaklings and crazy
  Keep breeding and breeding again?
The criminal, deformed, and the misfit,
  Dependent, diseased and the rest—
As we breed the human family
  The worst is as good as the best.

Go to the house of some farmer,
  Look through his barns and sheds,
Look at his horses and cattle,
  Even his hogs are thoroughbreds.
Then look at his stamp on his children,
  Lowbrowed with the monkey jaw,
Ape handed and silly and foolish—
  Bred true to Mendel's law.

Go to some home in the village,
  Look at the garden beds,
The cabbage, the lettuce and turnips,
  Even the beets are thoroughbreds.
Then look at the many children,
  With hands like the monkey's paw,
Bowlegged, flatheaded and foolish—
  Bred true to Mendel's law.

This is the law of Mendel,
  And often he makes it plain,
Defectives will breed defectives
  And the insane breed insane.
Oh, why do we allow these people
  To breed back to the monkey's nest,
To increase our country's burdens
  When we should breed from the good and the best.

Oh, you wise men take up the burden,
  And make this your loudest creed,
Sterilize the misfits promptly—
  All not fit to breed.
Then our race will be strengthened and bettered
  And our men and women, too, blest,
Not apish, repulsive and foolish,
  For we should breed from the good and the best.

THE RELATION OF THE SANITARY INSPECTOR TO COUNTY HEALTH UNITS.*

H. C. PUGH, M. D.,

YAZOO CITY, MISS.

Some difficulty is generally experienced in determining the class of personnel which should be employed in county health departments operating with limited budgets.

*Read before the Mississippi State Medical Association, Jackson, May 11-13, 1926.

Omitting the details of this question,—in the final analysis the selection of personnel should depend wholly on the problems presented and the amount of money available to deal with them.

There must, of course, be a directing head, commonly called the health officer. At this juncture it is desired to comment on the term "health officer." It is suggestive of power vested in a high class policeman rather than that of a professional educator and sponsor of the general well being of the people and industrial development of the community, and in the beginning, with the persons less informed in public health measures, who are generally in the majority, the aim is largely defeated or the progress so handicapped as seriously to interfere with the organization of a smooth running and efficient health department. People object to being made to do things for which they do not fully comprehend the reason, and the insinuations which the term "officer" carries with it seem, as mentioned above, to create resentment rather than to encourage co-operation. Why not then apply the term "health commissioner," or some other equally constructive title, to the directing head?

To resume the main subject, the writer is fully convinced that it is not reasonably possible for any county health department to be organized and operated adequately and efficiently until it has first been determined what are the outstanding problems and upon what class of personnel the success of the undertaking will ultimately depend.

In the counties of this great commonwealth will be found varying problems in public health. It is true that Mississippi is classed primarily as a rural state. Agriculture has been, and still is, largely the backbone of the state's resources. But a new day has dawned, and Mississippi is not approaching, but has actually reached, its era of industrial development. How many in this audience are conversant with the vast mineral resources of the state; of the rapid strides being made in transmitting hydro-electric power, and of the potential hydro-electric projects within our borders? With the coming of cheap electric power into an era where coal or other fuel is not found in paying quantities, industry has a chance to develop and compete on a basis theretofore unknown.

Reforestation and protection of the young timber, now definitely decided upon, opens the doors to added manufacturing with suitable power. Cotton mills, furniture and paper factories, mining enterprises, and many kindred and other industries are now within the grasp of the people of this state.

The raw material is abundant. The labor with its true American ancestral strain is unparalleled. Many present know of the recent blow which struck the oyster industry, and a lesser number are acquainted with the facts which surround the development of dairying or the problem at present from which this most remunerative class of business is suffering.

Into all enterprise, and most important of all, is the human element. The South has suffered on account of its supposed or actual health conditions. It is only reasonable that those interested in industrial development should consider the environmental conditions affecting a desirable and uninterrupted labor supply. The latter is largely dependent upon public health.

Historical facts, as well as present day observation, demonstrate that when men congregate in communities there is presented a sanitary environment vastly different from that of the nomadic race or sparsely settled areas of years ago. With the present day methods of transportation the man from the country is enabled to, and does, take a more or less active part in community affairs.

The relation of sanitary environment to the well being of the state is readily grasped, and the necessity for the practicing of practical sanitary measures equally understood. With the importance of those measures of preventive medicine which come wholly within the sphere of the licensed medical director fully appreciated, and the necessity for this professional directorship understood, there are in the main those phases of field sanitation which when put into operation have a lasting effect and upon which the actual success of public health work largely depends.

Maternity and infant hygiene, the finding and correcting of defects by the regular examination of school children, the use of vaccine and sera where only such process of control is known, or their use as a temporary expedient to prevent epidemics. Quarantine and isolation, are measures which are not considered to be a part of this discussion.

Considering certain diseases, — typhoid fever, dysenteries, hook worm, pulmonary tuberculosis, malarial and dengue fever, we enter into the realm of applied field sanitation. Cures of any or all of these diseases can be effected, but as a public health measure their prevention rests primarily with sanitation.

How best can the sanitary disposal of human excrement be handled, and water and milk supplies protected from contamination? In what manner can proper housing be brought about, and what are the best methods to follow to obtain mosquito control? Under certain conditions some of the above come completely within the sphere of the engineer. But following the main line of thought, particularly adopted, in connection with county health units, are the services of trained sanitary inspectors.

Here again is used a term with the definition of "policeman." A sanitary inspector, so called, possibly by virtue of vested authority, is placed at a disadvantage, and if there is any one who less needs to display a badge or be expected to carry a Colt .45, it is the individual engaged in health work. Sanitary laws are ample and health workers should be authorized to enforce them, but great care should be exercised and the "chip for the shoulder" left at home in the ice box. Educational work is the basis of the success of any health work.

The class of personnel depends on the major problems presented. While the proper place is available for each grade of health workers, the problems in field sanitation are so far reaching in their effect and of such immeasurable importance that the health department having such major problems can not profitably exist without the aid of personnel fitted to handle such problems. After the foundation is laid, the oyster and dairying industries must necessarily be given sanitary supervision and the employment of health officers is not to be thought of for this grade of regular inspection work.

Contingent with industrial expansion, and the present agricultural development, is sanitation, and effectively to combat those conditions of public health which are presented from time to time there must be provided the class of personnel whose services can be best adapted to the problem.

DISCUSSION.

Dr. J. B. Black (Tupelo): I do not know of any member of the health department that is quite as important as the sanitary inspector. The part of the work which he does is the part that the medical man ordinarily dislikes. Most physicians do not like to go into grocery stores and point out to the man that he is not doing certain things; they would let the man get by with these conditions and the first thing we know he will be running his business in such a condition that there will be danger of spreading disease through his uncleanly habits. The sanitary inspector can better do that than the medical man. Furthermore, if a man is director of a health department, whether he be a full-time man or a part-time man, there are many things to occupy his mind that will keep him from being an efficient inspector. If you have to examine school children, if you have to look after infectious disease, and direct a general educational program

on public health, you cannot have much time for going around to inspect grocery stores, meat markets, slaughter houses and places of that kind. That should come in the work of the man who is paid for that work alone. The medical man's salary is much more than that paid the sanitary inspector. If you have a very extensive amount of general public health work you do well to take care of the other work and let the sanitary part rest with the sanitary inspector who has had more or less training in that work.

The problem of rural health—the small town and rural district, is one that warrants the full-time activities of a man who will look after that work. It is a problem that should keep a man busy, and yet not many men in the average county will properly look after the sanitary side of the home in the small town and rural district. Most of our typhoid fever comes from the small town or rural district. Most cases of typhoid that occur in Jackson, where we have a good water supply and a fairly good system of disposing of human excreta—give a history of having been on a visit in the rural districts or small towns where sanitation is neglected. Recently in Hinds County we undertook to examine some shallow wells and springs that are along the main thoroughfares of the county, wells that people pass especially when they are out driving on Sunday. We have examined a number of these wells and found very few of them that do not show contamination with human excreta, showing what a great opportunity that is for people driving on Sunday to come in contact with foci of infection and come down with typhoid. That emphasizes to my mind the work of the sanitary inspector, not only looking after the homes of these people as to the disposal of human excreta, but also urging them to install a safer water supply for their homes. That is a great work for the sanitary inspector—he can be kept busy all the time.

We have had the attitude heretofore that just any kind of a man could be a sanitary inspector. I am glad that Dr. Pugh brought out that point that it is not the man of the ordinary police force type that makes a good inspector, but it is the man with common sense and tact who can approach people and persuade them to institute these sanitary measures. It is an educational process, and no one can go out and fight people and get much done in a sanitary way. It takes a man who is well trained, has lots of common sense to carry on a program of sanitation and get over to the people the necessity of making the environment of their homes sanitary.

Dr. J. M. Kittrell (Laurel): Dr. Pugh in his paper mentioned the educational side of sanitary inspection, and Dr. Black touched on that question. You know that the laymen in Mississippi, and everywhere else for that matter, believe in sanitation these days, but as a general rule their ideas are all wrong about what is important and what is unimportant in sanitation. The average layman when he thinks of sanitation, or of a sanitary inspector's business, thinks of screening fruit stands, brushing down cobwebs and a few things of that kind, and forgets entirely our gigantic problem in the South, and that is the filth-borne diseases. That makes it all the more important that the sanitary inspector be a man who along with making a good inspection can put over to the laymen the idea of what sanitation really means. In other words, making the other fellow see it in the light that the health workers and medical men see it. I remember asking Dr. Applewhite how a certain new man was getting along, and he said, "He is all right, but he is misled entirely. He is down there inspecting fruit stands instead of telling the typhoid story." The sanitary inspector must know the typhoid story and be able to put it over to the other fellow.

Dr. J. K. Fulsom (Raymond): I would like to emphasize a point in Dr. Pugh's paper bearing on the qualifications of the sanitary inspector. I think the general public is rather turning to the social type of sanitary inspector, not a sanitary policeman, and to my mind the quicker the active field workers get away from that idea that the inspector is a police officer, so to speak, and change to the right view that he is really and in truth, and should be, a sanitary instructor, the better results will they obtain for their effort. I have had some experience in health work and the longer I work the more I am convinced that there is no health work done that is worth while unless it is based on sound and fundamental instruction in the homes. It is no use to tell John Jones that if he does not make his home surroundings sanitary the law will get him, and not tell him why. But if you tell John Jones that he gets protection from certain filth-borne diseases, that his surroundings will be more pleasant, a better place in which to live and rear his children, and that the expense for this improvement will be merely nominal—to use a well-worn phrase, sell him sanitation—then when he gets that you will not be bothered with John Jones' house any more.

It may be you will find people reluctant. As a Mississippian I want to say that we have the best people on earth, but the slowest to change their ideas. They are fond of saying that the conditions that obtained in their great grandfather's times are good enough now. But in the light of today's knowledge and experience in public health work we know they are wrong.

Furthermore, the sanitary inspector to my mind represents a connecting link between the county health officers and the people. Naturally the duties of the county health officer are so numerous that he cannot get out into the field, consequently the sanitary inspector should be a man of such judgment, knowledge and experience as will enable him in a subordinate way to represent the county health officer to the people.

Public health work depends on money, and to get money we have to prove to the people the value of public health work; then we will get an appropriation, we will get co-operation, and we will accomplish much more than has been done in the past.

Dr. H. C. Pugh (closing): I only wish to emphasize one point. The sanitary inspectors throughout the entire State, as we all know, crave a certain amount of knowledge and are always looking about for something new. Unfortunate, however, is the fact that the literature available to the sanitary inspector, treating of his problems, has been written for physicians, and therefore is too deep for the inspector. Little or nothing has been written on the problems with which he is in daily contact.

To the county health officers present, I would like to say that the amount of knowledge your inspector takes into the field with him, is the exact ratio to the knowlede you place at his disposal, the amount of interest: is a reflection of the enthusiasm, the energy and the interest with which you imbue him.

I thank you gentlemen for the opportunity of presenting this paper.

VITAL STATISTICS AND COMMUNITY PROSPERITY.*

W. H. ROBIN, M. D.,

Superintendent of Public Health,

NEW ORLEANS.

Vital statistics, although a trite subject, and one of too little attractiveness to most persons, has been chosen by me, because I believe its importance in relation to community prosperity has apparently not sunk in to the understanding of most individuals. Only the personal bother of doing one's part in the accumulation, and not the more remote realization of the benefits to be derived from vital statistics, is considered.

Vital statistics is a specialized outgrowth of the census which in different forms has existed almost as remotely as history records. From time of utmost antiquity comes the record of gathered information as to population, wealth, etc., of races and communities.

In Jewish, Chinese, and Egyptian history there are rather numerous evidences that considerable attention was devoted to the collection of information relating to genealogy and population. Much greater attention was paid to gathering information of economic value as a basis for taxation, etc.

It is apparently authentic that during the Babylonian captivity a very through register of the population of each clan was kept by the Israelites and published in a compiled form on the return to Jerusalem.

The first definite approach to what is our present concept of vital statistics was made in modern times in Europe.

Sweden, near the end of the seventeenth century, legalized and made "compulsory the parish records of births, deaths, and marriages kept by the clergy—extending it to include the whole of the domiciled population of the parish." This system was adopted in Canada,—in New France; and shortly after in France.

I might state here, parenthetically, that in Louisiana as well as in other of the earlier settlements of the Southern United States these records kept by the clergy have been religiously cared for, and have been of incalculable service.

In New Orleans, where the records of the St. Louis Cathedral have antedated our civil collection of marriage, birth, and death records, they have been most jealously and carefully preserved, and have been frequently referred to, and recognized in courts of record. In the pre-

*Read before the Louisiana State Medical Society, Monroe, April 15-17, 1926.

servation of racial purity and in the establishment of ancestry and legitimacy they have been the source of priceless and, otherwise, irrecoverable information.

Banks are judged and get their rating by their published sworn statements. The value and credit of countries, states, and cities are arrived at by a study of their financial statistics. Countries and cities where the outgo exceeds the income: where there is no growth in wealth: where industries decline and failures predominate, are soon classed as undesirable places for investment or residence.

Where no adequate financial statements or records are available, the presumption is against a community or a business: no financier would invest in a business or community which could not furnish an adequate statement of affairs. So it is with regard to communities in relation to vital statistics.

People do not settle in, or invest in, a community with an unsavory reputation as to health. Where no adequate statistics exist the presumption,—and usually the correct one,—is that they are not kept and published on account of what would be their unfavorable character. Where no regularly published and authenticated history exists rumor and gossip take its place. One case of infectious disease, one death, or one instance of illegitimacy may be spread by the tongue of Dame Rumor into an epidemic, a cataclysm, or a moral inferno.

The individual doctor, midwife, nurse, undertaker, or layman who does not realize and do his duty in regard to vital statistics is as dishonest and culpable as would be a pilfering embezzler or careless employee in a business. He is cheating his community, sinning against his home.

The flagrant and palpable disregard of birth reports of a few, even with the widespread system of registrars and the bonus has kept our state out of the registration area for births, has added a stigma and meant increased disrespect for our state, especially in view of the fact that Louisiana, in 1920, had the highest illiteracy rate of all the states of the union. This latter fact was due chiefly to the large negro population, but unthinkable or uncharitable critics might easily associate the neglect of birth registration with a community indifference as to the future of our children, begun with neglect at birth and continuing with neglect in education.

In my own City of New Orleans we have endeavored strenuously to improve the birth registration and recordation and the results have been gratifying. When we went into office in the year 1925 there existed about 500 unregistered births (no transients). These have been practically all cleared up and during 1925 this number had been reduced to less than 100. New Orleans, I am sure, is eligible for both the birth and death registration privileges, and if the rest of the state was as well recorded Louisiana would be easily in the registration area.

I have written this commonplace and humble paper not in the hope of producing a masterpiece but out of a sense of duty, to call attention to the injustice and harm which is being done our state which has not been admitted to the registration area for births and is now threatened with removal from the registration area for deaths. This sad state of affairs is not blameable on the Health Department which has unstintingly labored in this cause, but is due to the irreponsible and unthinkable individuals who fail to do their duties.

DISCUSSION.

Dr. J. E. Doussan (New Orleans): Mr. Chairman and Ladies and Gentlemen: On Wednesday having wasted my fragrance on the desert air I hoped that today I might be permitted to blush unseen and to fade away from the landscape, but the reading of this paper reconciles me to life, particularly as it affords me the opportunity to pay a compliment during his absence (if he were here I would not do so) to an old

college friend with whom I studied medicine at Tulane University. Dr. Robin is the registrar of vital statistics for by far the largest area in the State of Louisiana, the Parish of Orleans.

On the whole the Parish of Orleans is reporting well. I am not at liberty to name the power that took the check but we recently had the benefit of an informal check which leaves no doubt that the State of Louisiana remains in the registration area. For those who do not know the meaning of the words "registration area," it might be well for me to explain them to you.

A federal registration area is one recognized by the federal census bureau in which not less than ninety per cent of the births or deaths are reported. A state may be in one or both areas. If 90 per cent of the births are reported in that state it is in the birth area; if of the deaths then it is in the death area.

In the matter of births in the Parish of Orleans, the reportation of births in the Parish of Orleans is doing very well. The slight discrepancy in the nature of bookeeping is being blotted out and we will soon be in position in the central bureau in New Orleans to have a transcript of very nearly every birth occurring in New Orleans. In the matter of deaths, the registration in New Orleans is 100 per cent (applause). And it is on account of that magnificent score that the state as a whole contrived to score over the ninety per cent mark.

Now Dr. McMullen alluded too briefly (I wish Dr. McMullen had had more time) to a very important problem, and that is the parenthood of America. What is the parenthood of America now and what is it going to be in the future? We have in this country a melting pot of nations. We have the school, we have the theater, we have the community playground, we have the dance hall, we even have the jail. All those are melting pots. But the greatest of them all is the bridal chamber and the crux of this amalgamation is in the cradle of America.

Now then, if we are interested in maintaining our civilization, if we want to know what course it is taking, if we want to be in a position to know what remedies to apply, to prevent it from going in a wrong direction, we must have a complete record of the fruit of this parenthood, and that is the birth certificate.

Dr. Dowling's splendid exposé of the benefits deriving from the operation of the Shepard-Towner Act in Louisiana forces this thought upon my mind: this is an act which provides that federal government shall match dollar for dollar with the states. A state sets aside a sum of money and with that in hand goes to Washington and says, "Here is our part of the fund." Congress gives us the share of congressional appropriation to which we are entitled.

Gentlemen, those in charge of federal bureaus always adhere to the letter of the law. They try to crystalize the spirit of the law when they come to executing it. If the time comes in the future when with our appropriation from Baton Rouge in hand we go to Washington and we say, "We demand our fifty-fifty from you," and if they take this view of it and say, "How many babies are born in the State of Louisiana," and we are not even in position to tell them, what is the outlook? The time may come when we will be refused federal alimony on the grounds that we don't even know where the babies of Louisiana are being born, nor how many of them are being born, and so are not in a position to give them the benefits deriving from the operation of the Shepard-Towner Act.

The material benefits accruing from full reportation of births and deaths and disease are enormous. Vital statistics are a stock-taking of a commonwealth. Unless we know how many births have occurred in our midst, how many deaths have occurred in our midst, we are not in a position to know the growth of population. We don't know our very best assets, our whole people, all of the elements of our population. Exact vital statistics are therefore an absolute necessity from the governmental standpoint.

I am sorry that more of the gentlemen who are in bitter opposition to a plan which I submitted last Wednesday are not here today. I congratulate those who are present. They are evidently the "bitter-enders."

You heard stand up just now a gentleman who is commissioned out of my bureau, who told you of the enormous, the almost insuperable difficulties of obtaining complete reportation of vital statistics under our present law on account of local political reasons. These local political reasons will continue to obtain indefinitely. The campaign now in behalf of better reportation is largely one of education and of moral suasion. If those who are in charge of the same are able to convince the doctors the greater part of the work is done.

I want to say to the laymen present and particularly the ladies, don't forget that the birth certificate is a birthright of the newborn child and a most valuable asset and the physician and midwife who do not offer a birth certificate to such a child are doing it positive hurt, an injury to his country, to his state, to the family and to the newborn child itself. (Applause.)

Dr. Thos. E. Wright (Monroe): Dr. Robin's paper is especially fine. Its value has been considerably enhanced because he had such a good reader to read it for him.

The matter of reporting births and deaths is one that should be very dear to the heart of every honest, honorable-thinking physician, and yet at the same time, among our prominent physicians as well as surgeons of the State, we have some men who are grossly and you might say almost criminally negligent in doing this.

I happen to know very well a physician who last year was checked up and found to be fourteen short on death certificates which he had not reported. The undertaker who handled the funerals for him under the law could not handle a funeral without a death certificate. This was reported to the State Board of Health which board in turn took it up with the doctor, the district attorney, etc. The information coming to me was that the undertaker reported this: that he made every reasonable effort and more than reasonable effort to get these things signed up, without any result whatever.

It is to be regretted that intelligent, high-class doctors should be so particularly negligent about a matter so important. I have some statistics from Dr. Dowling's paper just now. In 1925 there were 42,120 birth reported. Now we know, according to records, statistics we have gotten from places other than Louisiana over long period of years, about how many births may be anticipated for 1,000 population of a given county, parish, or state. This is in round numbers twenty-five out of each 1,000 inhabitants. Last year we came just a little bit under the requirements which would have placed us in the birth area. There was reported in Louisiana eighty-nine per cent of the amount which should have been reported, when ninety per cent would have placed us in the birth area.

That is one reason we are making such a specially heavy drive during 1926 so that we may get into that area, and we hope for all time keep us in this birth area. In other words, in place of being twenty-five per thousand which should have been reported only 22.3 per thousand were reported in 1925.

With reference to mothers and fathers not in the profession, and who are present at this open meeting, every child born into the world is entitled to have its birth recorded. There is a kind of sacredness about a thing like that which comes to the doctor only after he has gotten accustomed to having these recorded and signing the certificates.

I know a doctor who lives in this town whose reporting of births has gotten to be a kind of a hobby. He is with the mother when the baby is born and if he sees two or three children about he asks whether the others are registered. A letter to Dr. Dousson's office and in a few days information comes back that say two are reported and one is not. He has the other reported and signs for the doctor, per himself. Often the mother puts them into a sort of a little panel, birth certificate for Johnny and Mary and Sue and Henry and the baby. Those are nice little things to do; sentiment we may call it, but such sentiment should be a part of every high-class doctor's practice.

Dr. C. P. Gray (Monroe): Mr. Chairman, there is a combination of circumstances which prompts me to say something, notwithstanding that I did not hear all of the paper or the previous discussions. But pertaining to the reporting of vital statistics, there are several things that prompt me to say something at this time. Not only from my professional capacity as a physician as to why the births and deaths should be reported, but from my official capacity as coroner of this parish, I want to try to bring before this audience one or two or three reasons as to why it is absolutely necessary.

Just before I left my office I looked up a letter in regard to a child who was born here in 1914. This letter came from a lady who is now living in Cincinnati. It was received by me last year. Her child was ready to enter some school in that city and before that child could enter school she had to have a certificate from her physician or from the State Board of Health certifying to the fact that she was born on such and such a date and that she was vaccinated on such and such a date.

Now in 1914, Dr. Dowling, you remember how it was in our state at that time. There was no record at the State Board of Health that this child had ever been born. The way that I found the record of this child's birth was by associating the name of this woman and where she lived. I had never reported it.

Then another phase that presents itself as most important is as regards life insurance. If you will permit me to relate one incident, this coming in my official capacity as coroner. About two years ago a gentleman was reported to me as having died at such and such a rooming house in this city. On investigating as the coroner is supposed to do, I found several little memoranda in that man's notebook. It developed later on that the man was worth about $30,000 and had a bank account up in Arknsas, one in Texas and liberty loan bonds deposited all over the country. It finally resolved itself down as to when that man was born before the life insurance company would

pay one five cent piece, or before his estate could be settled.

Dr. Frank J. Chalaron (New Orleans): The value of vital statistics is so apparent that I can hardly add anything to it except to give a trite example. No farmer who holds a pedigreed bull or a pedigreed boar would fail to register the offspring of that boar or that bull. That means money in his pocket. That same farmer should require that his doctor register his child. It is a question, as Dr. Gray has said, of the greatest value in obtaining and collecting life insurance. European communities do it. Their registration is 100 per cent. Because they need men for cannon fodder and a man's date of birth means that he comes up for a class in these countries where military service was compulsory at a certain time. For that reason they established it and kept it 100 per cent. We should do it for better and higher ideals. (Applause.)

Dr. Oscar Dowling (Shreveport): In connection with what Dr. Gray said about the lady from Cincinnati, the law provides that if the doctor is living he can make the certificate at any time and have it recorded. If the physician who attended the mother at the time of birth is not living, secure a reliable record, copy and send it in. If two or three individuals who were present at the time the birth occurred can be located, get this record and send it to the State Board of Health and it can be returned to you as a certificate of birth. Take myself for instance, just six years ago my birth was recorded and carried on that basis. (Applause.)

THE PRESENT TREND OF SCIENTIFIC MEDICINE AS RELATED TO THE RURAL PRACTITIONER.*

R. C. ELMORE, M. D.,

DURANT, MISS.

On the cover page of the *American Medical Association Bulletin* for November appeared the following quotation from H. W. Davis in the Kansas Medical Journal: *"A Country Doctor Defined"*:

"If you can set a fractured femur with a piece of string and a flat-iron and get as good results as the mechanical engineering staff of a city hospital, at 10% of their fee;

"If you can drive through ten miles of mud to ease the little child of a dead beat;

If you can do a podalic version on the kitchen table of a farm house, with husband holding legs and grandma giving chloroform;

If you can diagnose tonsillitis from diphtheria with a laboratory 48 hours away;

If you can pull the three-pronged fish-hook molar of the 250-pound hired man;

If you can maintain your equilibrium when the lordly specialist sneeringly refers to the general practitioner;

If you can change tires at 4 below, at 4:00 a. m.;

If you can hold a chap with lumbago from taking back rubs for kidney trouble from the chiroprac;

Then, my boy, you are a Country Doctor."

A recent issue of *The Saturday Evening Post* featured an article on *"Can the Village Come Back?"* accepting it as a fact that the country village is in such a state of desuetude that if it ever functions again as in days of yore, powerful methods of resuscitation will have to be brought into play. The country village is or was an institution and as such it has passed from the stage of action. Some of the reasons assigned are: The automobile and good roads, and the tendency of the public to take advantage of the rapid means of transportation to give them access to a greater variety of merchandise advertised to sell at reduced prices. Is the country doctor as an institution passing from the scene? And, if so, is it worth while for anybody to take cognizance of this transition? If remedial measures are to be attempted, who is responsible for their inauguration? The medical fraternity, who in an altruistic spirit, should feel the responsibility for caring for the health of the nation? Or the people, who, in the last analysis, will be the real sufferers?

That the country doctor as an institution is passing, none will deny. Recently the

*Read before the Mississippi State Medical Association, Jackson, May 11-13, 1926.

literature has been cluttered with argument, statement of facts, and statistical tables galore, showing that the rural population is even now in many localities suffering from the lack of medical attention, due to the scarcity of rural practitioners; that the average age of rural practitioners is, in most sections, between 50 and 55, showing that the younger graduates are locating in cities and medical centers, leaving the older men, with the bag to hold in the rural communities. This is based on the classification of the U. S. Census Bureau, which places everything from towns of 2,500 population and down, in the rural class.

Dr. William Allen Pusey in a series of articles in the Journal of the A. M. A. last year went into an exhaustive study of the situation and made recommendations based on his findings, the substance of which was that the standard of medical education should be reduced and the requirements lowered, so that there would be more doctors and more of the class to whom rural practice would appeal. A splendid treatise, well written, in a thorough-going analytical style, characteristic of this prominent leader in medical affairs; but in the light of all facts, and as a representative of that rapidly declining class, the rural practitioner, with all respect for Dr. Pusey, I wish to ask if his proposed curtailment of the requirements for a medical education is really the proper and sensible solution of this perplexing condition? True, there is much that is worthy of careful consideration in his position and his argument, but from the standpoint of all concerned, would it not be more in harmony with the high ideals of our profession to approach the question from another angle? For instance, he has in mind the need of the public and the fact that large numbers of our citizenship might suffer from lack of medical attention because of lack of numbers in the medical profession, if present conditions are not relieved. But would it not be more in keeping to determine first and foremost the exact amount of work required to turn out an efficient practitioner—one capable of being entrusted with human life and upholding the high standards and traditions of the profession? If a mistake has been made in placing the standards too high, by all means, lower them, but if it takes 8 years of time, and $10,000.00 in money to turn out the finished product, let's have it. Dr. Pusey's plan smacks of discrimination against the people in the country. One infers from a reading of his article that probably a 4 or 6 years man is all right for the country, but for the city and larger towns, the well-trained and highly-efficient medical expert is the thing. We should like to have him answer this: What will prevent this short-course man from spending 1, 2, or 3 years in the country, doing an enormous practice, gaining the experience and knowledge here that his shortened course deprived him of, hoarding his savings during these few years of country practice, and just as soon as he is financially able, pulling up lock, stock and barrel, and moving to the city—to the medical center—to that Utopia of all modern medical men. No, one standard for the country and another for the city, is not the solution.

Allow me to refer again to the article in the *Post*. The author maintains that the country village not only can come back, but is actually on the way, and in some instances has arrived, citing a number of small towns where some progressive individual with a vision has in a measure revolutionized the business methods of the country village, with the result that instead of several business houses carrying a varied assortment of merchandise, each merchant is specializing—one carrying shoes and shoes only—another clothing, and so on, emulating their brother merchants in the city by having at all times a full and well-assorted stock, attractively displayed and attractively priced. In other words, giving the people what they want. In the medical profession does the public want a short-course, second-hand doctor?

The answer is easy to any who has observed the trend of the times. But in the case of the medical profession, the public has a lesson to learn also. The burden is not entirely on the back of the profession, though they must accept their portion of it, and do their part. The public is to have some jolts before this matter is entirely adjusted, and first and foremost the task is going to be to impress the people with the fact that all learning, all medical lore, and the only relief to be found is not in the city and the medical center. Coincidentally with this lesson, they are to learn that if a competent physical examination and prescription in a medical center is worth from $25.00 to $50.00, it should be worth at least from $10.00 to $25.00 in the country. Some very important and very urgent schooling of the public along this line is needed right now. When this is accomplished, and the physician is assured remuneration in keeping with his outlay for his education and his ability, my judgment is that practitioners will not be so scarce in country districts.

The next consideration in this connection is the part the doctor must play in this process of education. First and foremost, he must learn that scientific medicine can be successfully practiced, with limitations, of course, wherever and whenever physician and patient meet, whether it is in one of the leading hospitals of a large city or in a cross-roads shanty. Along with our leadings towards ultra-scientific teachings by our leaders, there has naturally grown the belief among both profession and laity that laboratory diagnosis and all the procedures and paraphernalia that go with the so-called specialist, are the "sine qua non." This is a phase of the subject which should receive careful consideration in the propaganda or process of education of the public referred to. Let the country practitioner perfect his diagnostic technique along scientific lines, taking advantage of every advance in laboratory procedure of which he can make practical use. The average country practitioner does not need to maintain a laboratory capable of doing Wassermanns, frozen section work, blood chemistry, etc. It is not practical for the average country practitioner to do a differential blood count as a routine on every patient, but he should be able to do so on occasion, as in doubtful cases of appendicitis and other acute abdominal or obscure infectious troubles; in obscure cases of pneumonia, in incipient tuberculosis, and some other infectious and communicable diseases, but I repeat, it is not practical for him to do so as a routine in every case. He should be able to make both a chemical and microscopical examination of the urine and feces. He should not only be able to do chemical analysis of gastric contents, but he should also be able to do fractional analyses in selected cases. He should equip his office with a Dunning colorimeter and ampoules of sulphonephthalein for doing kidney function tests. He should certainly understand the importance and technique of the 24-hours specific gravity fixation test. He should know how to take nasal and throat swabs and culture the germs, and how to stain and examine the slides for diphtheria, but he must learn also not to depend entirely on the result of his or anyone's examination of a throat culture. No less an authority than Kerley says that if a case is clinically diphtheria, administer antitoxin at once and continue administering it if indicated, in spite of repeated negative slides. He should also have a working knowledge of the ophthalmoscope for the more common disorders of the eye. These are a few of the necessary procedures that every country practitioner should be familiar with, supposing, of course, that all are familiar with such common procedures as accurate blood pressure determinations, intravenous medication, hypodermoclysis, etc.

The history of medicine for the past 2,000 years is the history of human error and human discovery, both elements contributing in a measure to the material

advancement of the science. The question under discussion is more or less of an economic one, but is no less dependent on the above statement. We may have made an error in placing the standards of medical education too high, but it should not be counted an error if the only result arising therefrom—which result, by the way, is only an opinion—is the scarcity of rural practitioners. My humble judgment is that this concentration of medical talent in cities and medical centers is but one element of a general movement in that direction. What has become of the country village? and who can say that its elimination is due to the exacting preparation required of the village merchant for business? What about the problem of the country church? How can we charge its decadence to the high-priced schooling of those responsible for its carrying on? As I said before, I am at one end of this proposition for my viewpoint, viz: the environment of a country practitioner—while Dr. Pusey is at the other end—in one of our metropolitan cities.

But when the country doctor really wakens to his responsibilities and possibilities and meets them with confidence and ability and when the rural population comes to a realization of its duties in the nature of support—financial and otherwise—my judgment is that the problem will be solved. We are at this time passing through a period of readjustment—one of the evolutionary stages of progress. Before conditions settle down to a satisfactory working basis for all concerned, no doubt some will suffer—principally the people in the rural communities, but this will play its part in the readjustment that is bound to come. As I view the situation—Dr. Pusey has made a very accurate diagnosis of the situation—but it seems to me it is one of those conditions which cannot be relieved by one prescription for a radical cure—but rather in the nature of a self-limited affair which must run its course. We must endeavor to meet the distressing symptoms as they arise and the best manner possible, and in addition to the measures already proposed, I predict that out of the readjustment, the various towns and communities in a county will have general practitioners whose duties by mutual agreement will be to specialize along certain lines—one will make a special study of obstetrics—another of venereal disease, and so on—taking special courses every year. There will be at least one good hospital in every county, equipped with a good laboratory with an efficient technician in charge, X-ray and physio-therapy apparatus, electrocardiographs, basal metabolism machines, and other apparatus, so that the up-to-date rural practitioner can take his patient to the hospital and treat him along scientific lines, and incidentally collect a fee in keeping with the work done and the services rendered. There will be one or more surgeons in each county who can take care of all emergency and other surgical work. The rural communities will have just as good medical and surgical attention as the cities and towns, and will be educated to pay just as good fees. When the automobile came, it was considered a rich man's luxury—suitable only for city dwellers—but see how the country pople have been educated out of this idea, and how they are spending larger sums of money for transportation than formerly. They have reached the corresponding stage in paying for their medical attention, but they are going to the cities and larger towns to spend their money for it.

Dr. Rudolph Matas, in his presidential address at the meeting of the fifteenth annual congress of the American College of Surgeons, spoke along these lines and predicted that as an outcome of changing conditions, the family physician would be completely eliminated, and that a central communal hospital "staffed by a competent group of clinical and laboratory experts will serve as a safe resort for whoever may be in need of medical help, and that the new type of doctor will find his chief occu-

pation as a sanitary adviser and public health officer." Himself a surgeon, he seems to think that in the future, surgery "will assume the predominant role in treatment." At the same meeting, Lord Dawson, a prominent British practicing physician, spoke along similar lines, and urged for the future a hospital for every community, no matter how rural, maintaining that the family doctor should remain the foundation of medical service, but that his outlook, functions and training required modification to meet changing needs. He suggested that in the future, the doctors of a district should form themselves into a faculty which would place the varieties of knowledge and experience of its members at the service of the community—really somewhat a prototype of our group clinics.

Medical practice has changed and is changing rapidly and there does not appear to be a place in the coming regime for the family doctor of the traditional type. In the evolution and development of the practice of medicine, the general practitioner must either move with the times or disappear. In the dawning of the new era of the practice of medicine by specialists, group clinics and a new type of hospital, with the increasing development of good roads, and rapid transportation, there is no place for lowering the standard of medical education, and in my humble judgment, such a move will play no part in the transition from our present condition to the golden age in medicine when capable, efficient men with high ideals and a vision of service to their fellow-men, their country, and their age, will be organized so that none will suffer for lack of medical attention, and they may practice the healing art with pleasure and profit to themselves and satisfaction to the community.

DISCUSSION.

Dr. W. A. Dearman (Long Beach): I am not a specialist, nor a diagnostician or anything of that kind, but somehow in the past fifteen years I have had a tendency to be interested in diagnosis. No rational and scientific treatment can be instituted for any condition until you have made a positive diagnosis, but I want to say that diagnosis does not consist of any one thing. I was surprised a few days ago when I began to index my records. I try to have a written record of each patient and know something about him. He is coming back some day, maybe in ten years, maybe in three months, and a systematic record that you can have on your desk is a good thing.

I practiced medicine in a small town in Mississippi, 23 years ago, for ten years—a poor town I am sorry to say—the poorest town in a poor poor county. One day I decided it was not the fault of the place, it was my fault—that I was rendering service commensurate with the remuneration I got for my services. Then I came to the conclusion that a doctor's success depends upon his knowledge, upon his physical capacity to put into motion his knowledge in the practice of medicine; then I came to the conclusion that the doctor never earns his bread until he has no teeth to eat it. A doctor in a poor community has not enough money to live comfortably, he cannot educate his children, cannot pay insurance, cannot meet the legitimate demands as an honest citizen, to say nothing of studying to acquire scientific knowledge, and I therefore said good-bye to the little town and went to a more lucrative center where I had an opportunity to rise to higher ground. I made up my mind that a doctor is entitled to a night's rest occasionally with no worry—mental and physical rest. The doctor in the country is on duty twenty-four hours a day. I have harnessed my horse seven or eight times in one night. I have waited on obstetrical cases, tedious and complicated and dangerous, away out in the country, at midnight, with no one to help me but an ignorant woman, no antiseptic precautions aside from a wash pan handed to me. I have given chloroform and had to deliver by forceps—the chloroform would give out and I would have to go back and get more. Under these conditions I practiced medicine for ten years.

One point the doctor brought out—that every county should have its hospital and let every doctor try to take his patients there. Sixty per cent. of cases treated at home have no ice bag, no clinical thermometer, and how can we carry on the practice of medicine under those circumstances.

The doctor charges what he is worth. He is worth what he charges, and if he charges $100 he is worth $100. But I believe we can live, we can survive. If not it is the practitioners own fault. We know we have hardships, and I think

there ought to be some men for night work. We cannot work 24 hours a day and be mentally and physically alert. No man can do that and keep up. He will begin to fag, his heart is bad, his blood pressure is high, until finally he breaks down. But the point I want to make especially is keeping records of your patients. I challenge any man, general practitioner or specialist, to practice medicine intelligently without a record of his patient's history and examination. Then we need the general physical examination from head to foot, and correctly interpreted; then all these correlated with the laboratory findings, when the report of the specialist comes back to you with all this data you can make a positive diagnosis, you can outline treatment, you can forecast the prognosis, and if you keep that patient under observation it will be the greatest satisfaction of all the activities of your professional life.

Dr. J. W. Barksdale (Jackson): Dr. Elmore's paper gives to me much food for valuable thought. I do not know that he is correct when he says that the day of the socalled country practitioner is past. Looking back upon my early days in the practice of medicine, as Dr. Bryan said last night, I can refer to many who were giants in the profession. I remember a paper read before this Association 25 years ago by our beloved friend, Dr. Ward, on the subject of diagnosis. He opened his paper with this sentence: "Diagnosis is the golden key that unlocks the treasure house of medicine." That is what these old men were believing in that day and it is what they were practicing. I sometimes think that with all the facilities at our command to aid us in making diagnosis—our ready access to laboratories, our reliance on the X-ray and other adjuncts to diagnosis—and mark you, they are adjuncts—we have lost those keener perceptions, those refinements of medicine without which no man can ever be a good doctor. We have lost the educated touch, we have lost sight of the fact that physical diagnosis is one of the most valuable aids, and while I do not suppose any man values the men in the laboratories and their facilities more than I, yet I do not suppose there is a man who puts less reliance in them when they come in conflict with the findings in the case—with the history and other things that aid in diagnosis. Nothing aids us more than what we receive from these adjuncts; but the man who is habitually a laboratory diagnostician is the man who makes many a failure in diagnosis and he is not a good doctor.

I am reminded of a story told some years ago by Deaver. There was an accident case in a little interior town in Pennsylvania and the doctor who treated the man who was injured, was brought into court. The patient was suing some corporation, and after calling on one specialist after another, all of whom qualified as experts, the doctor under whose care the man had been originally, was called to the stand. Asking the usual questions the attorney said, "What is your specialty?" He said, "I have none; I am simply a doctor." "Well," said the attorney, "I wish you would tell the jury the difference between a specialist and a practitioner of medicine." The man replied, "I do not know what it is, except that it takes about nine of these fellows to make a real doctor." And that is true.

To go back to the men who were really leaders, I think I came along at a period when medical education had fallen to its lowest ebb, when all that was required for entrance to a medical college was the tuition fee. There were certain educational requirements that were said to be necessary to matriculation, but if they had been insisted upon a great many men would never have grasped the science of medicine because they had only the rudiments of a common school education. I have seen that period, but thank God it is past and gone, and I never want to see the degeneration of the medical profession because of lowered qualifications. This situation will adjust itself in some way. I have no solution for it, but I do know that the country will be supplied with the necessary number of doctors, and I want to say right here that I deplore this idea that the city is a better place for the doctor than the country. The average rural citizen is a man of a great deal of perspicacity. It is harder to get away with ignorance and carelessness in the country than it is in the town. Where there are masses of people you can fool them; but usually where there are only a few people you must stand on your own merit, honesty and real worth. So in my judgment, take him up one side and down the other, his honesty, his having to rely on himself, the cultivation of his physical senses, and the fact that he has no one to call on to help him, I think the country doctor is better than the average city doctor, and I think that is the explanation of his superiority.

Dr. C. A. Sheely (Gulfport): I am very much interested in this discussion this morning. As Dr. Dearman said, I have been all along the path, and as I see it we are all striving to improve our position; in other words, to be of more service to humanity.

I went along in the general practice until about 1912, when I read Dr. Billings' wonderful paper on focal infection as the cause of arthritis, and the mental diseases that came from focal infection; then the following year I was present

and listened to Rosenow read a paper along the same line, and I thought our problem was solved. I was going back home to carry the good news to all the other doctors and we would get together and understand much of the pathology that had been worrying us in years past. But as you know, that was not the solution of our troubles. Then we found that as general practitioners we knew so much that we could not cover the entire field, so I said to some of the doctors, "If you will go away and take a course in this specialty or that, then I will throw some of this work to you and we will all come up together. We will join hands and solve some of these things that are giving us trouble."

Last year I had the pleasure of hearing Dr. Hunner's paper on ureteral stricture, and then I said to our urologist: "That is the explanation of all these troubles with chronic appendicitis cases that we have operated on, that have come back," and as one doctor said this morning, "Doctor, that pain is still there." The pain is still there because it was not chronic appendicitis in the first place; it was something else. Dr. Hunner told us that ureteral stricture is rather frequently, but not always, situated low down where the ureter empties into the bladder.

So as I look at it we have been glad to shake hands with the specialist. After a time I cut out obstetrics. I could not do a satisfactory surgical operation if I had been waiting on an obstetrical case all night; then I cut off the general calls, because as your practice increases in one direction you must curtail it in another, and so I had to get off into a little more distinct class. But the thing I want to emphasize is that the doctors should bring their cases of acute abdomen to the surgeon at once. Do not expect us to do miracles. Do not catheterize a woman whom you know has an obstructed bladder. Why not bring her to the surgeon and let him have a chance to clean it up.

Dr. R. C. Elmore (closing): I fear that Dr. Dearman missed the point entirely in my paper. He said he left Purvis looking for more fertile fields, and when he did, he did the very thing which I said Dr. Pusey's short-course country doctor would like to do—pull up as soon as he could and go to the city. In my paper, I endeavored to present a problem, and in applying it to Dr. Dearman's case, what about the people in Purvis, Who took care of them after he left? This one case is an example and a counterpart of many others, bearing out my contention that there is bound to be an adjustment of conditions, and that the people in the country districts must be educated to take care of a good doctor because he takes care of them.

I think Dr. Barksdale misunderstood me. I meant to say that the country doctor of the traditional type was passing; that is, the doctor that would put on his "specs," look at your tongue and tell you that you needed a "round of calomel."

Dr. Sheely chimes in with the rest of the specialists and admonishes the general practitioner to "get these patients to us in time." If a ruptured appendix comes in, he will do a skillful operation, of course; but if the patient dies, the country doctor gets the blame for not getting the patient to the surgeon in time.

LIVER FUNCTION AND GALL-BLADDER SURGERY.*

M. O. EWING, M. D.,

AMORY, MISS.

The gall-bladder is part and parcel of the biliary system and it is impossible to consider it aside from the liver and liver function. Our ideas of the physiology of the liver, which have persisted for many years, have recently been somewhat changed and augmented by late discoveries through experimental physiology. Radical changes in our ideas of the physiologic function of an organ immediately brings about the necessity for reviewing and revamping our beliefs of the pathology, etiology, diagnosis and therapy of the diseases of that organ.

The experiments of Mann, of Rochester, definitely prove that at least a portion and probably most of the bile is manufactured elsewhere than in the liver, and that jaundice rapidly occurs in hepatectomized animal. His experiments also show that the liver is the chief organ forming urea and destroying uric acid. Urea almost immediately disappears from the blood and urine and uric acid rapidly accumulate in the blood following hepatectomy. The experiments of Mann and Howell seem to show that the liver produces fibrinogen and that in cases of severe liver injury this

*Read before the Mississippi State Medical Association, Jackson, May 11-13, 1926.

function is impaired with resultant tendency to prolonged and severe hemorrhage. They also prove that there is considerable margin of safety of liver tissue in the body, in that 15% to 20% of the liver tissue suffices for body needs. This explain why it is that liver damage in many cases can progress exceedingly far before serious symptoms develop.

The experiments of Lyons, Swalm, Rowntree, Huntsley, Rosenthal and Rosenau concerning the detoxicating function of the liver give us many insights into the etiology of liver and gall-bladder disease. The liver is the great detoxicating organ of the body and acts to filter out or destroy the many poisonous substances brought to it through the portal vein and alimentary tract. Toxins and poisons formed elsewhere in the body are likewise carried to the liver for destruction or excretion. Then, too, the experiments seem to show that the liver acts in somewhat similar fashion in cases of bacteraemia. (C. G. Bull.)

Recent anatomic studies show a close relationship between the lymph drainage from the ileo-cecal region and the gall-bladder. Dr. Lyons, although accepting the consensus of opinion that "the law of contrary inervation of the gall-bladder and the spincter of Odi" has not been substantiated, still maintains the therapeutic value of the Meltzer-Lyons drainage of the duodenum. He explains the benefits claimed by him and other physicians using this treatment in therapy of the diseased biliary system on the grounds of a vicious circle of secretion and excretion of toxic matter in the bile and its reabsorption in the intestines, which the duodenal drainage interrupts. In his therapeutic experiments to prove his contention he makes the discovery that our past ideas of the amount of bile secreted in twenty-four hours are erroneous. In many cases he found the bile excretion approaching 2500 to 3000 cc. per day, rather than the 1200 to 1500 cc. which has been considered normal.

Other experiments by Rosenau and separately by McClure and Mendenhall, using duodenal tube to obtain the bile, have demonstrated that impaired liver function can be proved by estimation of the concentration of cholesterol, bile pigments, and bile acids in the bile. With impaired liver functions these normal constituents may be diminished to a trace or are even absent, and improvement in function keeps pace with the increase in percentage of these constituents. The Meltzer-Lyon drainage now stands in better light as a diagnostic rather than a therapeutic measure.

The experiments of Mann and his associates to determine the excretory function of the liver have shown that the liver excretes in the bile many substances introduced in the body through the alimentary tract, or intravenously, or hypodermically. Some of these substances are likewise excreted by the kidneys, but some of them, like tetra-chlor-phenolphthalein, are excreted solely in the bile. As a result of these experiments we have the Graham Test.

ETIOLOGY OF LIVER AND GALL-BLADDER DISEASE.

1. Infection and toxaemia arising in the portal area. Colitis, appendicitis, typhoid fever, dysenteries, and peptic ulcer give drainage of toxins and infectious material, either by way of the portal vein or lymphatics. Pyorrhea, alveolaris and tonsillitis also give rise to pus in the alimentary tract. And who of us has not seen jaundice as the outstanding symptom of biliary system damage arising during the course of these diseases?

2. Damage resulting from the detoxicating function of the liver. Poisons ingested into or arising in the alimentary tract are carried direct to the liver by the portal vein and the liver attempts, so far as it is able, to destroy or render harmless the damaging agent. If the poisoning is too severe or too oft repeated, damage to the biliary system will result. The effects of alcoholic and phosphorus poisoning and

constipation and incomplete bowel obstruction are examples of this method of damage. The toxin arising in the course of acute infections elsewhere in the body and the bacteria themselves in those diseases accompanied by bacteraemia, are carried to the liver for elimination. The biliary system may suffer profound damage as result. Who of us has not seen hepatitis with jaundice in pneumonia? A considerable portion of the salvarsan which we give is eliminated by the liver and occasionally we see evidence of liver damage as result. In this category we must also place the liver damage in the toxaemias arising from pregnancy.

3. Damage resulting from circulatory disturbance. The liver has a two-fold blood supply and any impairment of either the general or the portal circulation results in engorgement and stasis in the liver with impaired function and if long continued in permanent damage.

4. Excessive diet. The bile contains large quantities of cholestrin held in solution by the bile salts. It is the belief of many investigators that a diet rich in cholestrin producing foods may result in more cholestrin being produced than can be held in solution by the bile salts. One theory accounting for the occurence of gall-stones postulates this theory of excess cholestrin in the diet.

DISSERTATION.

It is not the purpose of this paper to go into the symptoms, diagnosis and treatment of gall-bladder disease. However, the consideration of the recent experiments and our present views of the etiology of disease of the biliary system enhances the importance of certain facts to us as surgeons, and it is the purpose of this paper to enumerate those facts.

1. The gall-bladder is an integral part of the biliary system and does not become diseased independently. A diseased gall-bladder means a damaged liver, and the damage may or may not be sufficient to show up on clinical tests due to the fact that we only need 15% to 20% of functioning liver in order to get along. In any event, it is well to try to ascertain how much the damage is before deciding to operate and what operation to do.

2. Three forms of test are available to determine the question of liver damage. First, we may obtain bile by duodenal drainage and estimate the percentage of normal of the three constituents (cholesterol, bile-pigment and bile-acids). Second, we may take a blood-specimen and estimate the serum-bilirubin. Third, we can have the patient ingest or we can give intravenously one of the tetra-halogen-phenolphthalein dyes and estimate the elimination time.

3. Remember that in a surgical patient a temporary depression of liver function may prove just as fatal as if the depression were due to permanent lesions. Seriously impaired liver functions means poor risk surgically. Gall-bladder cases except those with common-duct obstruction seldom call for haste and time spent or not spent in improving your patient's liver function will show in your mortality report.

4. "Silent Gall-stones" are misnomers. They have not been silent at all. We have merely failed to listen to them. The presence of gall-stones is always manifested by symptoms, though the symptoms may not have been severe enough to cause recognition or the symptoms may have been misinterpreted.

5. Present day statistics since typhoid fever has become so much less common, show appendicitis, typhoid fever, and pregnancy in this order as the probably chief factors in the etiology of cholecystitis and cholelithiasis. It is well to consider every appendicitis case as a future gall-bladder case and advise care as to habits and diet. This is more especially true of the suppurative case.

6. Jaundice is always a serious symptom in a gall-bladder case and immediately places the patient in the class of poor risk surgery. Considerable depression of the liver function can exist without demonstrable jaundice, but when jaundice is visible, it is prima facie evidence of serious interference with the liver function and is worthy of deep surgical consideration. It is not only the risk of hemorrhage and slow healing, but the jaundiced patient shows a markedly diminished vitality in other regards. They do not stand shock and are more prone to pulmonary complications, circulatory disturbances, paralytic ileus, renal failure, and all the possible complications. The indications are to relieve the jaundice if possible before operating. If this is not possible, then the indications are to shorten the coagulation time by calcium salts and build up the fluid reserve by forcing fluids and to increase resistance by transfusion if necessary. The operation should then be done under local anesthesia and the first objective of the operation should be to relieve the jaundice. It is possible by the niceties of surgical judgment to decide just which case will stand extension of the surgery beyond this objective, but judgment on this score is often faulty and mortality reports would read much better if we would take less chances on this point.

7. Poor Risk Gall-bladder Surgery.—To this group belongs especially the group of cases with jaundice, with renal involvement, and with cardiac decompensation, and those with peritonitis. The indications are for as little surgery as will restore the patient's vitality and that done under local anaesthesia. What matter if a second operation is necessary and this operation made more difficult through the presence of adhesions? It is better always to do two operations and have a live patient than one complete operation and a dead patient. At this point I cannot help but strike upon the moot question in gall-bladder surgery, namely, "to drain or to remove." From a consideration of liver function, one fact is evident, that in the presence of jaundice, drainage either through the gall-bladder or through the stump of the cystic duct, or through an incision into the common duct is necessary. A diseased gall-bladder, like a diseased appendix, is best removed, yet we do not remove all diseased appendices. We sometimes find it wiser to drain. We have all heard at one time or another the statement made that no more shock is produced and that it is as safe to remove as it is to drain. This might be true under general anaesthesia, but it is the opinion of the writer that the surgeon who attempts gall-bladder surgery in the poor risk case under general anaesthesia is not giving his patient the best possible chance and few will maintain that cholecystectomy is as safe as cholecystostomy under local anaesthesia.

SUMMARY.

I close with a plea for very conservative surgery and that under local anaesthesia in poor risk gall-bladder cases, with later operation for complete repair of the lesion.

DISCUSSION.

Dr. James K. Avent (Grenada): In my opinion there is little we know about the liver, and also little we know about the gall-bladder. Next time you take a patient to be operated, say for gall-bladder, I want to tell you this—do not say the patient is cured when the gall-bladder has been removed. You ask the doctor—especially if the diseased gall-bladder has been around the liver for a good while—you will get chronic biliary cirrhosis, especially on the right side, and you ask the doctor to let you see the right lobe of the liver, and then ask to see the left lobe; then ask him to feel these two lobes. He will tell you that the right side is harder than the left; then he will say the right side is yellower than the left. What has happened? The gall-bladder might have drained so well that he might have questioned whether it should come out, but if he had inspected the right and left lobes of the liver he would have seen that the association with the diseased gall-bladder had caused the infection to travel up the submucous glands and given the patient chronic biliary cirrhosis. In my opinion a man should never remove a gall-bladder unless he sees this, because if the

patient is not cured it is because he has already developed chronic biliary cirrhosis in the right lobe of the liver. You do not need to do this with all your patients, but in some cases take a few flakes from the right lobe of the liver and a few flakes from the left, and study them. I saw Deaver take out flakes and send them up for frozen section examination and that report would be back before the patient was sewed up. Possibly the other lobe will be all right—have normal tissue, while one will show chronic biliary cirrhosis.

We do not know as much about surgery of the liver as we should. The fellow that tells you that he places drainage in the gall-bladder instead of removing it—I will say he does not know how to remove the gall-bladder. All these tests are not positive, but it takes them all together in order to know what you have before you. You may have normal function tests and you may have stone in the cystic duct for years and the patient is all right. These different tests are not reliable in themselves. If you do liver tests, do them all, and then after all these tests are made open up the patient and examine the two lobes of the liver and see what you have.

Dr. M. Q. Ewing (closing): I tried as far as possible to keep out of the operative field in writing the paper. It is purely a question of the function of the liver associated with a diseased gall-bladder. The doctor quoted Deaver, and everybody knows he is exceedingly radical about gall-bladder surgery and always has been. That would seem to bear out the statement that you do not have a diseased gall-bladder without a diseased liver. Why do we get the cirrhosis of the doctor speaks of? Very seldom do we operate on a gall-bladder case that has not been a gall-bladder case for a period of years. It has been there a long time and has gone on until the condition is sufficiently aggravated to provoke surgery, and then we find cirrhosis of the liver. Cirrhosis is not a contra-indication of operation; it is rather an indication, and even though late you have an opportunity to get rid of a focus of infection. It is wise always to remove the appendix with a gall-bladder that shows signs of disease, but my plea is for conservative surgery, that the poor risk be drained, and the radical operation reserved for later.

THE ANTAGONISTIC EFFECTS OF ANTIDIPHTHERITIC SERUM ON THE TUBERCLE BACILLUS.*

S. B. WOLFF, M. D.,
OPELOUSAS, LA.

The purpose of this paper is to record an unusual thought, a theory as it were, rather than a proven clinical fact, but since time, and added clinical material serves only to strengthen my belief in my ability to finally prove the truth of this theory, I thought that it would interest the members of this society to share with me the great possibilities which my theory offers.

About two and one-half years ago I was called to treat a white male child of this city who had had fever for three months, a temperature which would suggest to any clinician the possibilities of tuberculosis. After all possible clinical tests had been made to solve the etiology of the fever, I made a diagnosis of tuberculosis and had the child in bed, with forced diet and general hygienic measures.

Some peculiar mental reaction prompted me to make a throat culture, as the child's throat showed no gross suspicious lesions, and to my surprise a report of diphtheria was obtained. In fact, so surprising was this report, that a second culture was made which confirmed the first. Realizing that no harm could come from diphtheria antitoxin and believing that the elimination of diphtheria with antitoxin would remove this encumbrance from the vital body forces and hasten recovery, I administered ten thousand units of diphtheria antitoxin and was surprised to have this boy's fever, which had lasted three months, disappear in one week. He has had no fever or other symptoms since that time.

This unusual result gave impetus to new interest and thought along the lines of the possible relationship between diphtheria

*Read before the St. Landry Parish Medical Society, March, 1926.

and tuberculosis. I wondered just how many people running this low, irregular form of fever, with a diagnosis of possible pulmonary tuberculosis hanging over their heads, if subjected to throat cultures would react in this positive way. Thought and fancy alone could not satisfy my curiosity on this point, so I subjected ten of my patients, showing apparently normal throats, but running irregular temperatures and showing other tuberculous stigmata, to this test and found positive diphtheria cultures. I first gave them antitoxin and later toxin-antitoxin with clinical improvement in all. Further thought and study on the relationship of these diseases revealed interesting facts. I have questioned several hundred cases of proven pulmonary tuberculosis, and have yet to find one giving a history of diphtheria infection in childhood. I have also noted in my ten years of general practice in this community that diphtheria rarely affects the colored population, a people very susceptible to tuberculosis. These facts at least suggest the immunizing power of the one disease against the other. Is this one of nature's cryptic methods of preserving and prolonging the life of the human organisms against one of the most virulent diseases? The age incidence of various diseases suggests, too, the possibility of this great natural scheme of health, and for generations tradition, and folklore have always considered the childhood diseases as necessary evils of our civilization.

With these observations before me, I injected diphtheria antitoxin into patients in advanced stages of tuberculosis. The curative effects have not been encouraging, but in a limited series of cases I have noted a constant and definite alteration in the tubercle bacillus, in that it has become beaded at the ends and at times seems to have been broken up. I claim no curative effects from diphtheria antitoxin, but my study so far has stimulated me to go further into the question of immunity, for if such a condition does exist, then with our various toxin-antitoxin mixtures which confer a definite and prolonged immunity for about six or seven years, may we not expect by working along these lines with our children to stamp out one of our great mortality producers in later life?

This is merely a preliminary report. I hope later to be able to furnish data which will either establish the fact or fallacy of my belief.

NEW ORLEANS
Medical and Surgical Journal
Established 1844

Published by the Louisiana State Medical Society under the jurisdiction of the following named Journal Committee:

S. M. Blackshear, M. D., *Ex-Officio*
For three years, A. A. Herold, M. D., *Vice-Chairman;* Lucien Ledoux, M. D.
For two years, Oscar Dowling, M. D.; H. W. Kostmayer, M. D., *Secretary.*
For one year, H. B. Gessner, M. D., *Chairman.*

EDITORIAL STAFF

H. W. E. Walther, M. D.—*Editor*
H. Theodore Simon, M. D.—*Associate Editor*
J. S. Ullman, M. D.—*Associate Editor*
Paul T. Talbot, M. D.—*General Manager*

COLLABORATORS—COUNCILORS

For Louisiana	For Mississippi
H. E. Bernadas, M. D.	J. W. Lucas, M. D.
F. M. Johns, M. D.	D. W. Coker, M. D.
F. T. Gouaux, M. D.	M. W. Robertson, M. D.
S. C. Barrow, M. D.	T. W. Holmes, M. D.
F. C. Bennett, M. D.	D. W. Jones, M. D.
C. A. Weiss, M. D.	W. G. Gill, M. D.
V. A. Miller, M. D.	E. M. Gavin, M. D.
S. J. Couvillon, M. D.	W. H. Frizell, M. D.
	S. B. McIlwain, M. D.

SUBSCRIPTION TERMS: $3.00 per year in advance, postage paid, for the United States; $3.50 per year for all foreign countries belonging to the *Postal Union.*

News material for publication should be received not later than the twentieth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

THE JOURNAL *does not hold itself responsible for statements made by any contributor.*

Manuscripts should be addressed to the Editor, 1326 Whitney-Central Bldg., New Orleans, La.

HYPOTENSION.

It always affords one a certain amount of pleasure to read the name of a friend or an associate signaled out for special mention in conjunction with some noteworthy bit of writing or some peculiarly keen scientific work. It was most gratifying to open the June nineteenth number of the London *Lancet* and to find that the leading editorial dealt with a paper written by Dr. A. E. Fossier* on the subject of "Essential Hypotension." The editorial briefly called attention to the increasing interest in this subject which is being aroused in the United States by clinicians and then proceeded to quote verbatim the very vivid and lucid word-picture drawn by Fossier to describe the subjective sensations of the poor unfortunate victim of inheritance of a faulty bodily structure. The next paragraph then discussed the thesis advanced by Fossier to explain the genesis of hypotension. At the end of this paragraph the editorial writer wrote that the most important fact that can be drawn from this work is that no one single organ can be implicated as the cause of low pressure within the vascular tree.

(*Am. Jour. Med. Sci., 1926, 171, 496.)

In order to comprehend more fully the gist of this editorial it might be well to pass in review rapidly the theory advanced by Fossier to explain the very important symptom-complex associated with hypotension. It is his contention that the primary basic fault lies in the habitus of the patients. They conform to a certain physical type which is characterized by elongated chests, exaggeratedly slanting ribs, narrow costal angles, low diaphragms, and protruding lower abdomen. This type of individual is well known, and needs no further general description but the effect of this bodily confirmation on the heart and great blood vessels has not been previously stressed. The arch of the aorta is pulled down, its hemicircle is small; the ascending aorta is elongated; the heart is vertical and of small transverse diameter, and most important, it is poorly supported by the diaphragm. Transposing to the splanchnoptotics the general principles of hydraulics that "the larger the pipe and the smaller the radius of the bend, the smaller will be the final velocity energy," an explanation is offered for their low systolic pressure, for the longer the aorta and the narrower the diameter of the arch the lower will be the systolic pressure. Alleviation of this disturbing symptom may be secured by treatment directed to the relief of the splanchnoptosis: artificial support, exercises to strengthen the abdominal musculature and forced feeding to increase the intra-abdominal tension.

With the main contentions of Fossier we are in complete accord but we do not see how hypotension, which is not a distinct

nosologic entity either from a clinical or an anatomical standpoint but is merely the result of splanchnoptosis, as the author himself says, can be correctly labeled "essential," meaning all important. The splanchnotopsis may be essential but not the secondary low blood pressure.

AN UNUSUAL OPPORTUNITY.

The forthcoming visit to and tour of our state by Dr. Morris Fishbein is, indeed, an event to which we should give more than passing mention. Anyone who has noted the high-class editorials in our Journal of the American Medical Association, as well as those initialed "M. F." in Hygeia, is justified in congratulating himself on the fact that the author is making a special trip to our state to deliver first-hand messages to us, our confreres and our friends among the laity.

Last month, we detailed the subjects on which he prefers to talk; suffice it to say, that, coming from an authoritative source, as they do, these addresses will prove to be an education in themselves.

The Journal hopes that the local committees and the various societies of the communities in which Dr. Fishbein will deliver addresses will leave no stones unturned to advertise thoroughly the events, so that, not only the people of the immediate cities and towns, but, also, those of surrounding territory, will be fully posted as to the time, place and subject. We suggest that the Councilors get busy and circularize their respective districts.

It is an unusual opportunity, doctors, so let's all put our shoulders to the wheel and give Dr. Fishbein a rousing welcome and crowded houses.

LEGAL RESTRICTIONS.

There is a certain amount of unrest and discontent among doctors, regarding the various laws, restricting the practice of medicine. Records and reporting take up much of the time of the conscientious man; the non-conscientious does not worry about them. Drugs, non-narcotic in effect, come within the scope of the narcotic laws; valuable drugs are outlawed on the waves of hysteria.

Thomas Jefferson said that "The least governed people are the best governed"; congresses, legislatures and other law-making bodies should feel that, although they, with the executive department, are invested with the *Power* to make laws, they are not *obliged* to enact new laws and laws and complicated laws. To paraphrase: 'Better to simplify the laws we have than to try others, the workings of which we know not of."

FOR FATHERS ONLY.

"In the average American home, the father contributes too little to the family life and the mother too much." These are the words of a father as published in a new magazine called *Children, the Magazine for Parents.* A professor of sociology in Boston University and author of "Wholesome Childhood," Dr. Ernest R. Groves continues his advice to fathers by deploring what he terms "a mother fixation on the part of children." To combat this, he suggests ways in which father may manage to see his children at times without the presence of mother.

Explaining his position, Professor Groves writes:

"It may be natural and good for young children to be more with their mothers than their fathers, but it certainly is not wholesome for these children to be brought up almost exclusively in the fellowship of their mothers. Fathers have something also to give the growing child, something that mothers cannot ordinarily give so well.

"You and I cannot be good fathers unless we face this fact squarely and make it the cornerstone of our family program. Unless we deliberately arrange to provide for fellowship with our children, we are

apt not only to deny them the greatest gift in our power, but also to be forced gradually to assume a role which makes impossible any sympathetic understanding between our children and ourselves.

"Do you not know fathers who have been made family bankers and policemen? It has become their primary business to draw checks and punish the children. When they come home at night they listen to tales of disobedience and portion our measured punishment; when they hurry away in the morning they leave a freshly written check on the breakfast table. None of us can be of any real value to our children if from early years they have been accustomed to think of us as the ones who bring home bundles, draw forth money from our pocketbooks, and inflict punishment; yet unless we contribute something in the forms of fellowship we become of necessity associated in the mind of the child with family finances and punishments.

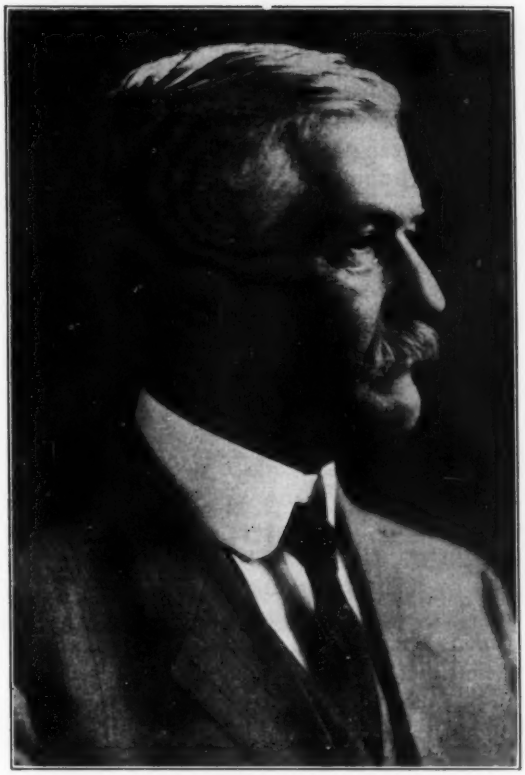
"There are fathers who believe that their sons need comradeship, but that their daughters can safely be left entirely to their mothers. No graver mistake could be made than to discriminate between sons and daughters in the giving of comradeship. Daughters particularly need their fathers if they are to have normal attitudes toward men."

CORRESPONDENCE.

New Orleans, Oct. 19, 1926.

To the Editor:

Upon advice from physicians in New Orleans, Baltimore and New York that freedom from physical and mental strain was the best remedy for the affection of the muscles of my eyes, I recalled what my good friend, General Gorgas, had often said of the restfulness of the Canal Zone. I was reminded of this also by Dr. W. E. Deeks of New York, who had spent many years in Panama, and while it seemed far from home, doctors and others friends said to get entirely away from executive worries and cares was exactly the thing to do.



Major-General William Gorgas.

I had been to Panama, which to most of us means Canal Zone, in 1913 and subsequently, but I had no idea that conditions could be so delightful. The climate was a surprise as my recollections included experiences of warm days, but during my stay this summer the temperature ranged between 70° and 86°—never over 86—and the nights were pleasantly cool. The climate is seemingly a tonic and is especially curative for those afflicted with high blood pressure, heart or kidney diseases.

Hospital and medical service in Panama is worthy of note, as, exclusive of the Zone, there is one hospital bed for every 474 people; if the hospitals of the Zone are included there is a bed for every 162 inhabitants. Dr. L. C. Prieto, a Tulane graduate, is in charge of the obstetrical section of Santo Tomas Hospital, where there is an average in excess of 100 births per month.

There are two modern public laboratories besides several private ones; the Heric Clinic operates the Panama Hospital. The physicians are well qualified and one hundred and seventeen of the one hundred and twenty-seven physicians belong to the Medical Association of the Isthmian Canal Zone, which is allied with our American Medical Association.

The death rate of Colon for 1925 was only 12.82, with about ten negroes to every white person—Panama a little higher—while the rate of the Canal Zone (8.00) is said to be lower than that of any state in the Registration Area, a record conclusive as to the excellence of the sanitary condition and proof of what can be done to lower the number of deaths in even a tropical country. These low rates are to the credit of Colonel Chamberlain, Dr. D. P. Curry, acting chief health officer of the Canal Zone, including Panama and Colon, Dr. Jesse L. Byrd, health officer of Colon and Dr. Goldwaithe of Panama.

The markets and dairies are so well planned and kept, also the stores, that they are models in both construction and cleanliness. Dr. Henry Goldwaithe's excellent method of garbage disposal has attracted attention in many countries. I was particularly impressed with the way milk is handled and the expense attached. A glass of fermillac (buttermilk) sells for twenty-five cents and persons who buy pasteurized milk on the Zone must have a permit, just as we have in the States in order to buy a bottle of something not so good for health. All sections require that milk shall be pasteurized. Colonel Chamberlain speaks with gratification of the homes, 88% of them being sanitated.

While living is not cheap some things are fairly so. I had two suits made of flour sacks which were inexpensive and entirely satisfactory; they look nice, too.

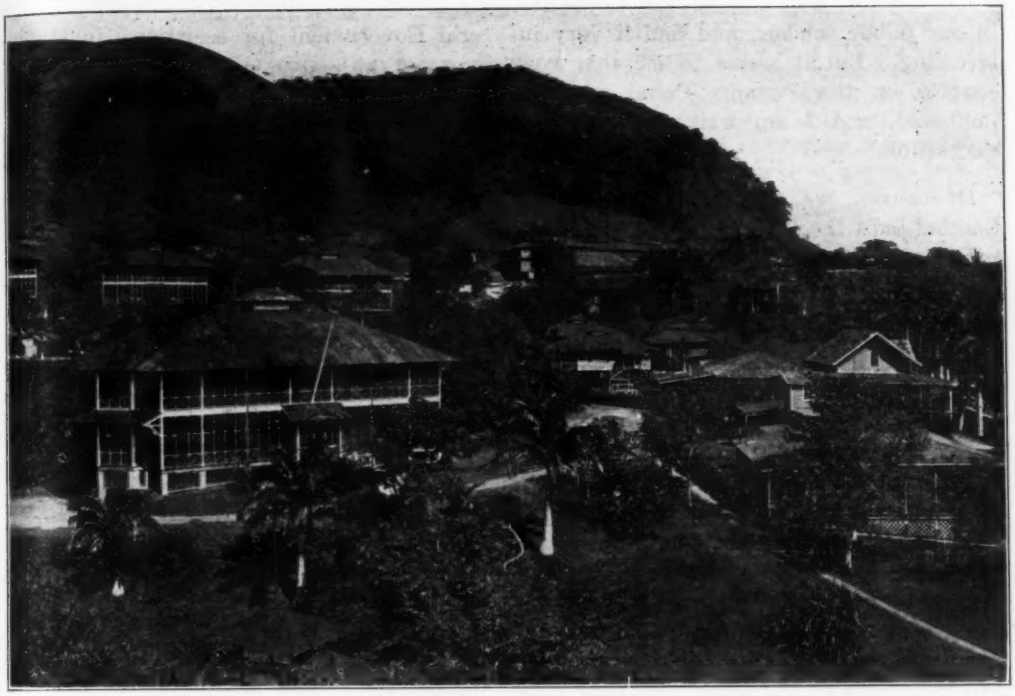
I was greatly impressed with the desirability and the practicability of the situation as a place for the Gorgas Memorial. Few persons will ever realize the vast influence of the work of General Gorgas upon the progressive civilization of the world. The jungle wilderness, the disease pest hole of the Western Continent, was made habitable, healthful—a garden spot where it is a joy to live. It was the vision, the faith, the industry, the almost sublime patience of General Gorgas which accomplished this; a fit memorial is due him.

But aside from the almost ideal conditions, the situation offers the greatest potentialities for effective service in the welfare of two countries by an institution planned and built to meet the demands of preventive medicine and the public health needs of the people. The possibilities are illimitable; they can be made real only by the establishment of an institution, the greatest of its kind—greater in scope and service than any the world has ever known.

I started on the cruise home from Cristobal, just thirteen years from the day of my return on my first trip. I came on the S. S. Turrialba, one of the finest boats of the United Fruit Company. Due to the generous kindness of E. F. Beyers, master of the ship, I was removed the first afternoon to the bridal suite—so you know I had beautiful surroundings as well as comfort. At day break Monday morning shortly before the loading of the boat, I walked twice around the deck in my bare feet and found the floors so clean it was not necessary to wash the bottom of my feet, except as a sanitary precaution. I told Dr. W. W. Calhoun, the doctor of the Turrialba, that his ship is a S. S. spick, span, spotless and sanitary.

I was impressed also with the way the wharf was kept clean. Men worked right behind those who were loading picking up bananas or waste that might fall on the platform and when they had completed their work the dock was as orderly as in the beginning.

The possibilities in the development of our commerce with Panama, Central and South American countries, came to me many times and never more so than the day of leaving; 48,000 bunches of bananas, 28,000 cocoanuts and 20,000 crates of



GENERAL GORGAS' HOME.

avocadas, were a part of the cargo; 316 men did the work between five a. m. and three p. m., and it was interesting to learn that Mr. Jesse Baker from Myrtle Grove, Louisiana, was in charge of the work with Mr. Dick Moore as assistant.

Anyone from this country traveling in the tropics, and especially in South and Central American countries, senses a certain disharmony in the relations of the people of the south and the north. Doubtless the motives underlying this misunderstanding are quite complex; the difference in language is a barrier to interchange of ideas and therefore to mutual appreciation and the inevitable differences in customs and modes of thought are racial, I am sorry to say that there seems an element of distrust of our methods and intentions and no doubt history has furnished for this an adequate background.

The policy of "peaceful penetration" is not new and is known to the small countries south of us. To my mind success in this depends now and will depend in future on the confidence that we can inspire largely by the equity of business transactions. I am confident that the business people of the United States have reached the same conclusion.

An interchange of products is informational and an interchange of visits, if we might put it that way, is educational, and we of the States, and particularly of the southern states, should have in mind the desirability of cordial relations with our southern neighbors.

OSCAR DOWLING.

Editor's Note: The letter below written by Congressman Dr. Ladislas Lazaro, of the Seventh District of Louisiana, to the publishers of "The Essential Facts of American History," is self-explanatory.

Opelousas, La., September 27, 1926.

Messrs. B. H. Sanborn & Company,

Chicago, Illinois.

Gentlemen:

I have read your book "The Essential Facts of American History" which is taught

in our public schools, and find it very interesting. But it seems to me that your chapter on the Panama Canal could be improved, and I am writing to make a suggestion.

Of course, we all know that General Goethal built the Panama Canal and is entitled to all the credit you can possibly give him, but it seems to me that Doctor Gorgas is entitled to some credit and that the children ought to understand the whole history of it.

We know that the French government failed to build the Panama Canal under De Lesseps because of a high death rate from yellow fever and malaria; that later, about the time of the close of the Spanish-American War, the United States government appointed Major Walter Reed of the United States Marine Hospital and Public Health Service to conduct an investigation into the origin of the fever which for centuries had been the bane of the tropics. His assistants in this important investigation were Lieutenant James Carroll, also of the Marine Hospital Service, Assistant Acting Surgeon Lazear, and Dr. Aristides Agramonte.

These heroic men undertook the work in the spirit of service to humanity and to advance the torch of scientific truth further into the surrounding gloom of ignorance and preconceived prejudice. Dr. Lazear sacrificed his life in carrying on the necessary experiments, but in the end what is popularly known as "the mosquito theory" of yellow fever transmission was established.

It was in New Orleans, however, in 1905, that the new theory, which was so slow in finding its way into public recognition, and even among members of the medical profession, was first put to a conclusive practical test.

Yellow fever made its appearance in that city in August, 1905. During this epidemic the people of New Orleans asked the Federal Government for assistance in stamping out the epidemic. Dr. J. H. White of the United States Marine Hospital and Public Health Service took charge of the work. With the co-operation of Dr. Kohnke, City Health Officer, and other medical men of New Orleans and Louisiana, the fever was stamped out completely and the city was declared free from infection long before the first frost. The pluck and brain and money of New Orleans and of the State of Louisiana, marshalled under the leadership of science, interpreted by that trained and tireless fighter of epidemics, Dr. J. H. White, had won the most brilliant triumph the world had ever witnessed in the realm of medical science. So, in the victory that New Orleans won in 1905 the problem of successful digging of the Panama Canal was solved. It was the result of this splendid achievement that enabled Dr. Gorgas to convert the Panama Canal Zone into a healthful place, and it was after this was done that General Goethal proceeded with the work of building the Canal which finally united the two great oceans.

I hope you will give this matter due and careful consideration when your book will be revised and printed again.

Yours respectfully,

LADISLAS LAZARO.

CORRECTION.

Through error on the part of our printer an important footnote failed to appear under the paper by Drs. R. H. Turner and P. H. Jones, entitled "Yatren 105 in the treatment of amebic dysentery" which appeared in our October issue. The footnote in question being: "Aided by grant from the Schwartz Research Fund." As the authors state that this valuable study on Yatren was only made possible by the grant from this Fund, the omission is all the more to be regretted. We sincerely deplore the oversight.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

During the month of October the Board of Directors held one meeting. There has been one Scientific Meeting and one combined Scientific and Third Quarterly Executive Meeting of the Society.

Drs. C. T. Williams, J. O. Lisenby and A. McK. Powe have been elected to Active Membership in this Society. Drs. Suzanne Schaefer, G. C. Culley, Herbert L. Weinberger and Robert M. Willoughby were elected to Interne Membership. Drs. F. C. Hava and Harry Heiman were reinstated to Active Membership.

The Society has approved of a change of investment of the $30,000.00 Fund known as the Domicile Fund from the present 4¼% Liberty Bond holdings to bonds paying around 6% interest which bonds shall be selected from the list of investments which the State of Louisiana legally authorizes as investments for trust funds of minors. Before the Fund can be transferred a majority of the Membership must approve this resolution and we are asking that everyone return to us at once the postal card which has been sent them.

The Stanford E. Chaille Oration will be held Monday, November 8th, the Orator being Dr. Allan O. Whipple, of New York, and his subject will be "The Spleen and Its Relation to Blood Dyscrasias."

At the Scientific Meetings the following papers were read and discussed:

OCTOBER 11TH

"Sarcoma following Fracture, or Fracture following Sarcoma"....By Dr. Hermann B. Gessner
Discussed by Dr. Amedee Granger

"The Toxemia of Scarlet Fever with reference to the Experimentally Induced Nephritis." Lantern slides....By Dr. Charles W. Duval
Discussed by Drs. L. R. DeBuys and Edmond Moss

"The Conservative Treatment of Eclampsia"
....By Dr. E. L. King
Discussed by Dr. Walter E. Levy

OCTOBER 25TH

"The Audiometer in Hearing Tests"....
....By Dr. Arthur I. Weil
Discussed by Dr. H. L. Kearney

"Swimming Tank Conjunctivitis"....
....By Dr. Chas. A. Bahn
Discussed by Dr. Victor C. Smith

"The Clinical Value of Ehrlich's Aldehyde Reaction in the Diagnosis of Deranged Liver Function: Results in Fifteen Thousand Urine Examinations"....
....Dr. Allan Eustis
Discussed by Drs. U. W. Giles and Walter E. Levy

"Notes on the Use of Lipiodol in the Bronchi"
....By Dr. P. H. Jones
Discussed by Dr. Chaille Jamison

The membership of the Society is now 485 of whom 443 are Active Members.

REPORT OF TREASURER.

SEPTEMBER.

Actual Book Balance 8/31/26	$2,402.87
Receipts during September	$ 243.16
Total receipts	$2,646.03
Expenditures	$ 289.64
	$2,356.39
Outstanding checks	$ 102.17
Bank balance: 9/30/26	$2,458.56

REPORT OF LIBRARIAN.

JULY-SEPTEMBER

The work of the Library from July-September has been quite heavy in spite of the intense heat. Five bibliographies have been prepared on subjects as follows:

Syphilis of the Stomach (1922-26)
Stovarsol (1922-26)
Leontiasis
Pellagra (1922-date)
Cirrhosis of the Liver in Children

These lists have been placed on file for the use of the membership.

One hundred and seventy-four volumes have been added to the Library during the quarter. Of these 43 were received by gift, 101 by binding, 13 by subscription and 17 from the New Orleans Medical and Surgical Journal.

A meeting of the Library Committee was held July 21st at which Library plans were discussed. Four members were present and much interest was shown in the problems presented.

We wish to acknowledge with thanks gifts of books and Journals from Dr. C. J. Miller, Mrs. M. H. McGuire, Dr. Allan Eustis, Dr. Walter E. Levy, Dr. H. Dickson Bruns, Dr. F. Chalaron, Dr. W. A. Love. We feel that this increased number of donors is a very promising sign. It shows a healthy co-operative spirit on the part of the membership toward the Library. We are always glad to receive these donations and by the resultant pooling of medical reading matter, the greatest good can come to the greatest number.

H. THEODORE SIMON, M. D.,
Secretary.

TRANSACTIONS OF THE JOINT CLINICAL MEETING OF THE ORLEANS PARISH MEDICAL SOCIETY WITH THE CHARITY HOSPITAL STAFF IN THE MILES AMPHITHEATRE, CHARITY HOSPITAL, HELD JUNE 14th, 1926.

CASE NO. 1.

Presented by Dr. R. H. Turner.

Mr. D., age 43 years, lieutenant in the Fire Department. This patient is being presented because this seems to be a classical case of sprue that has responded to therapy which has certain new features. For two years this man has been sick. His illness began suddenly with diarrhoea, frothy movements, followed by loss of 20 lbs. weight and strength; the condition was preceded by sore mouth. These symptoms persisted for over a matter of months with conditions taking a downward course. Was admitted to the Hospital January 1st, 1925, about 18 months ago and was in the hospital for 5 weeks. During that time he showed considerable improvement. Instead of ten to fifteen movements a day, when he left the hospital he was only having two or three. He was put on a diet of acidophilous milk with later addition of various fruits, and upon leaving the hospital stayed on that diet fairly well. After two months he began a downward course. The second time he came in he was having as high as thirty movements daily, had become extremely weak and his weight, which was usually 200 lbs., was 139 lbs. He had become very restless, slept very little, had sore mouth—almost any food causing pain to the mouth; he was so weak he could hardly walk. At first admission he had a blood picture similar to that of pernicious anemia; with improvement it changed to a mild secondary anemia. Second admission December 1st, 1925, when blood picture was again that of pernicious anaemia. He was placed at first on a diet of whole milk and raw pancreas; diarrhoea dropped from twenty-five to thirty movements to ten a day but continued to be pure froth. After this treatment for about two weeks, he was given crystal violet, a dosage of 50 mg. six times a day for three days. The total daily dose was 250 mg., given in gelatin capsules of alcoholic solution for three days. At the end of that time he was having two movements a day. Within two or three days, and since then, he has been having formed movements. Two other courses of crystal violet were given a similar nature. In the third course, instead of giving in alcoholic solution, the powder mixed with dextrin in gelatin capsules was given. After this he was placed upon a diet of protein milk, gelatin, one steak a day, one portion of oatmeal, two baked plantains, and two raw over ripe bananas. That diet has been continued up to the present time, gradually omitting the protein milk and increasing bananas to twelve or fourteen a day; he still takes steak, oatmeal and two portions of gelatin a day. He uses no sugar, using saccharine in tea and coffee. All food is as free of fat as possible. He continues to take pancreas. His blood has gone from 1,800,000 to over 5,000,000; hemoglobin 90, weight from 139 to 206 lbs.; strength from barely being able to walk to his now present ability of being able to go up training tower without dyspnea, and he considers himself a well man. In February he had a slight diarrhoea for one day but with the exception of that once, he has none.

The use of crystal violet in this case is based upon the work of Boggs and Fried* who wrought a spectacular cure of a case of intestinal sporotrichosis by its use. At the time of this patient's first admission many monilia were found in the stool. Since crystal violet (gentian violet) inhibits the growth of the monilia as it does the sporothrix it occurred to us that the use of crystal violet might indicate whether the monilia played any important part in the production of symptoms. However, on repeated careful culture during the second admission, no monilia were found. The flora of his stools showed a great preponderance of gram positive organisms. Since gentian violet in solutions of one to one hundred thousand or stronger inhibits practically all Gram positive organisms, it was believed that the use of gentian violet might change the intestinal flora. This it seemed to do. As to the exact part played by the crystal violet or by the diet used, it is impossible to say. But since the result has been so spectacular, Dr. Musser, whose patient he is, wished it reported.

DISCUSSION.

Dr. Chaille Jamison: That case was admitted the first time to Ward 14 when I was in charge of the service. We promptly made a diagnosis of pernicious anemia. He had the blood picture, was not emaciated, having a certain amount of diarrhoea; had no hydrochloric acid in the stomach content. He had, so far as we could determine, no degenerative lesion of the cord. All of this seemed to fit well with pernicious anemia; he was not emaciated but had lost much weight. We put him on acidophilous milk and he promptly made a satisfactory recovery. He then returned in an apparently worse condition and diagnosis of sprue was made. Whether sprue and pernicious anemia is different, is open to question. With reference to the use of the pancreas: when Dr. Herrmann's younger brother was here he told me in pernicious anemia they were using liver and liver soup. Since

*Boggs and Fried—Sporothrix infection of large intestine and finger nails. Bull. Johns Hopkins Hospital, 37:164. 1925.

we have heard Minot's paper, I have recently seen two cases of sprue; both have been more advanced than this case; both have shown blood pictures of pernicious anemia and absence of hydrochloric acid, have been emaciated, and had white, frothy stools. One of these cases was sent back to Alexandria and showed markedly good results; a bad prognosis had been given. We had her on liver and pancreas and gentian violent and she made a surprising recovery; she has regained perfect health and she had been in a terrible condition. I have another case now in Hotel Dieu who has some other condition besides. Her blood picture showed a red count of one million, today her blood picture shows three million red cells. She is not well but her condition has certainly cleared up. About this case at Hotel Dieu: apparently, we could find no monilia in stools; they were never found at Mercy; two or three months later, after use of gentian violet, they were found in the stools. There is no question in my mind that we have been seeing sprue around this hospital for a good many years, but we have made the diagnosis of pernicious anemia on the blood picture and achlorhydria alone and we have not taken into consideration that emaciation and diarrhoea were constant in sprue. I am not prepared to say that the two diseases are not the same thing. Where a diagnosis of sprue can be made with reasonable certainly, the treatment as outlined is apparently specific.

Dr. J. Birney Guthrie: I should like to know about the method of feeding the pancreas, keeping it, how taken, and some little idea as to the source of supply. We want fresh pancreas and want to know where to put our hands on fresh pancreas. With reference to gentian violet, did I understand it had been found best in solution or capsule.

Dr. Turner (closing): As to the matter of how best to eat raw pancreas: This patient obtains the raw pancreas from the slaughter house, he cuts it up into small pieces, puts a little salt and lemon on it, and eats it in that way. As to giving gentian violet, it is somewhat of a gastric irritant. Boggs and Fried gave salol coated capsules of the powder. Owing to the fact that we wanted it to act as high in the intestines as possible we tried first alcoholic solution in gelatin capsules; the capsules soon go bad. Mr. D. took it either way. Other patients have vomited. The best way is to mix dextrine with crystal violet in a proportion of 2 to 1. When this is thrown into water the powder disseminates and goes into solution instantly; without the dextrin it forms a sticky mass that goes into solution poorly. Salol coated capsules are all right. The difficulty is if you use too much salol it will go through without being dissolved.

CASE NO. 2.

Dr. L. L. Cazenavette.

The history of this case was read by Dr. Garnier. The family and early personal history irrelevant.

The subject, R. J., col. male, laborer, 25 years of age, was admitted to the neurological service on May 23rd, 1926. His complaints consisted of inability to use the left arm and left leg, and of some stiffness in the neck. He dated his troubles to a fall from a cart three weeks before admission. Dazed for an instant only he soon recovered full consciousness. He then noticed his helplessness on the left side and difficulty in turning the head. There was severe pain in the neck. He remained in bed at his home in Addis, La., for some time. There being little improvement he sought admission here.

The neurological examination made at the time of his admission revealed a complete paralysis of the *left* upper extremity of the flaccid type with loss of reflexes, and a paralysis of the *left* lower extremity with some rigidity and increased reflexes. There were present increased knee jerk, Babinski and ankle clonus on the left. The cremasteric reflex was present on left and absent on right. The abdominal reflexes were present on left absent on right. Voluntary movements of right side of body and limbs unimpaired. Subjectively he complained of a loss of "feeling" on the *right* side of body including arm and leg. Objectively there were found complete loss of sensation to touch and pain on the right side of body including extremities with preservation of these on the paralyzed or left side. There was a transverse zone of hyperaesthesia in the lower portion of the neck about the sixth cervical segment. The anaesthesia on the right side extended upward to about the sixth cervical segment. No disturbance in temperature sense or deep sensation could be definitely determined. There was at all time control of bladder and rectum. The head and face showed no disturbance. The pupils were irregular in size, the right was a little larger than the left, and the palpebral fissure was also observed smaller on left. There was noticed a deformity and limitation of movement about the cervical vertebrae. The skiagraphs of the cervical region as reported by the radiologist reveal "a fracture of the spinus process of the fourth cervical vertebra with displacement of fragment downward and anteriorly. There is evidence involving the body of the fifth vertebra and to a lesser extent the sixth vertebra, which, when taken with the history, is probably due to a partial compressed fracture with some backward displacement of the body of the fifth cervical vertebra." Other laboratory tests of blood, etc., were negative.

The above history and neurological findings make certain the diagnosis of traumatic Brown-Sequard paralysis with upper level of lesion about the sixth cervical segment. It is now six weeks since the accident and the patient presents marked improvement. He now has some voluntary movement in the left hand and arm, both in flexion and extension. He is able to walk, with a drag and spasticity of left foot. He has a hemiplegic gait. He still has ankle clonus and positive Babinski on the left. The anaesthesia still covers the right side of body and limbs to about the sixth cervical segment. Motion and sensation in head and face are not affected. An interesting point concerning the distribution of the anaesthesia in this case is that the line of demarcation does not take place directly at the midline of the body anteriorly but extends about three quarters of an inch from the midline. This point is of diagnostic value when we consider the possibility of hysterical hemianaesthesias which are invariably of midline distribution. Another point of interest shown by study of this case is the location of the lesion. We see it affecting here the left half of the cord in the cervical region. The majority of cases presenting this most interesting classical syndrome result from trauma of the dorsal region of the cord. In this case as in most such cases of traumatic origin we do not find all the symptoms we would expect in a complete section or destruction of a lateral half of the cord at a given point. There are always some fibres or pathways in the affected areas that escape destruction. Hence the modification of symptoms in each individual case, and the presence of a partial Brown-Sequard syndrome. The prognosis as to complete recovery is not encouraging. The pathological reflexes show positive involvement of pyramidal tracts. However, the patient has shown so much improvement in a comparative short time the more improvement should be expected. As suggested by Dr. Emmett Irwin an immobilizing brace would be preferable to operative procedure. He will be referred to the orthopedic service.

CASE NO. 5.

Dr. J. H. Musser

I could not bring any patient from Ward 48 so will present a chart inscribed on the other side of the blackboard. In the past six months in Ward 48 we have had the opportunity of seeing a number of cases of scarlet fever, 23 in all. We have treated them with Dochez's anti-scarlet fever serum. The twenty-three cases have shown uniformly good results. In a few early cases the skin blanching reaction was positive but lately we have not felt the need of this test. We give 10 cc. of serum at a dose. We found if the antitoxin is given early there is a complete disappearance of rash within 24 hours. In 9 cases the rash was gone in 24 hours. The disappearance of the fever was not quite so prompt. The fever fell to normal in practically every case immediately following injection of serum, irrespective of the length of time the patient had the specific disease. If the patient had had the disease longer than two days there was a tendency of the fever to return. For example, in the first case, antitoxin was not given until 5 days after the appearance of the rash. The rash was gone in 24 hours. The temperature hovered around 100° for the next two or three days before dropping to normal. The typical fever curve we get is something like this. The temperature is 102° before serum, falling promptly to normal with disappearance of symptoms. Some of the cases have fallen by rapid lysis. In none of the cases seen has there been any untoward reaction or complication. In none of the caes leaving here could we find otitis nor any kidney trouble. The only reaction we got was that in a patient 22 years of age who had a severe urticaria; the temperature went up about 48 hours after disappearance of the specific rash, and three days later the wheals made their appearance. The majority of these cases do not go through a typical stage of peeling; the majority of them peel slightly, around the finger nails, tips of the fingers and toes. One very interesting feature is the fact that we have been able to discharge these cases much earlier than is usually done. Some were discharged in two weeks after the appearance of the rash or from 10 to 13 days after admission to the hospital. The results indeed have been excellent throughout. In only one case have we repeated the dose. In that individual the temperature came down by crisis and disappeared for a period of about 12 hours. The patient had a second rise to 103° and persisted there for 24 hours. I suggested the next day to repeat the serum and the temperature came down and remained down. It may be said that scarlet fever, like all infectious diseases, varies in severity and maybe the cases here in New Orleans have not been particularly severe. However, several cases came in with 104 3/5°. The mildness of the attack we believe can be explained by the fact that there were no complications and the serum acted promptly, in spite of the fact that in one case it was given five days after the rash appeared. The procedure is a real advance in special therapy and the results were very beautiful indeed.

DISCUSSION.

Dr. Jamison: I should like to ask if any of the cases have been followed long enough to make sure there are no kidney complications?

Dr. Musser (closing): We did not see any kidney complication in the wards; there was none within 14 days after the serum, but we have not

followed up the cases to know if this sequel developed later.

CASE NO. 6.

Dr. H. Theodore Simon.

I present these two cases of spastic paralysis of the lower extremities on which we have done the Stoffel operation because prior to this operation this type of patient was given up as a hopeless invalid. Adolph Stoffel, in 1913, first described this operation for splastic paralysis. Bruce Gill reported 32 cases in 1920, and after Gill's paper this operation for spastic paralysis has been done frequently. As we all know, spastic paralysis is not a true paralysis—it is merely an inhibition of central control, allowing a stronger group of muscles to overcome a weaker group; in the lower extremities the adductor muscles press the thighs together, the hamstrings flex the knees and the gastrocnemius and posterior tibials hold the foot in an equino-varus position. The technic of the Stoffel operation is to dissect out the nerve supply of the strong group of muscles, and cut away part or all of this supply so that the weaker groups can more freely function. The first case presented is one of monoplegia, the patient formerly walking on the toes. I dissected out the internal popliteal nerve and from it separated and cut away the nerve supply to the gastrocnemius muscle group. The case still presents a valgus deformity but walks flat on his foot—this valgus is due to the post-tibial muscle which still functions. This operation was done only four weeks ago; the weaker groups have not had chance of recovering co-ordination. After the muscle is cut, massage, physio-therapy, etc., is instituted. We are going to try elevation of the outer sole of the shoe and elastric strap pull and if we cannot get this patient to walk without the valgus we will have to dissect the nerve supply of the posterior tibial muscle and cut it.

CASE No. 7.

This child was seen first about two years ago, a case of marked spastic paralysis of both lower extremities, bed ridden with marked flexion and adduction deformities. We put this child in casts, straightened the deformities and then put on braces, but did not succeed in maintaining correction. When he came back to us he was walking on his toes, his knees were pressed closely together and his gait was bad. We did a Stoffel operation on both obturators and both internal popliteal nerves. He is now getting around without braces, walking flat flooted and as he grows older he will develop a better gait. We have used this operation also for the upper extremities, dissecting the median nerve, testing the flexor and pronator nerve supplies and cutting these, thereby relieving the typical wrist flexion forearm pronation deformities.

The results in these cases are not as striking or satisfactory as in the lower limbs owing to the numerous intrinsic muscle movements of the hand and fingers. In case of contraction of the knees due to hamstring spasticity we have dissected the sciatic nerve and have cut away the hamstring nerve control from this nerve. This quite readily allows the weak quadriceps extensor to function better and thereby relieves the bend at the knees.

CASE NO. 8.

Dr. J. A. Danna.

I am going to show the fifth case of empyema treated by aspiration and replacing of aspirated fluid by air. There are two ideas that I would like to have you take home with you in discussing this work: Firstly, the replacing of fluid with air and complete removal of all fluid at one sitting. Those of you who have had any experience in tapping the chest know you cannot entirely empty the chest with the usual method. If you do get all the fluid possible out (even in cardiac cases the lung is edematous and unyielding) you cannot empty the chest entirely, and if you do nearly empty the chest your needle impinges on the lung wall and the patient begins to cough and you have to stop. The contrast of the present method with the pain and discomfort that the patient experiences in the use of the early method of trying to empty into the chest, is quite marked. The second point I want to stress is that we can, by this method, cure empyema. As to whether we can cure all cases of empyema, we do not know; time will tell. This is the fifth case which we have on record. Cases have ranged from acute cases of a few days' duration to two or three months before first being treated. This man had an attack of influenza four months ago. He was aspirated by Dr. Daniel Murphy on the 14th of February; had his second aspiration about a week or ten days later; had a third aspiration. He came into the hospital about the 20th of last month. Had an aspiration on the 23rd of May and got 450 cc. of pus; injected 450 cc. of air and six days later we did a second tapping and were only able to get 20 cc. of fluid. (Picture.) This shows the picture when he first came in; this is the picture after the first tapping; this is another picture after an additional accumulation; this shows the final picture immediately after the second tapping of 20 cc. The last aspiration took place the 29th of last month. This is the picture taken this morning, showing chest clear of fluid; the chest is empty. I believe this man is cured. Most of the time he has been here he has been walking around; he has been comfortable all the way through. None of the operations have

been very disagreeable. I would like to have a little more experience along these lines so if any of you will help me by seeing that I get in contact with the patient or trying the method yourselves, I will appreciate it very much.

DISCUSSION.

Dr. J. Birney Gutherie: I have had rather extensive experience in removing of fluid from chest and replacing with air. The method is a valuable one, and worth while in every way. I see the case from the medical standpoint. Especially am I interested in effusion where the heart is interfered with. Origin of the fluid we will not go into. We see contraction of the heart due to increased pressure and advisability of removing the fluid. The question of removing the fluid is an interesting one. Occurrence of cough and other signs we have all been concerned with. About 300 or 400 cc. is all we dare to take out of the chest. With this method it is apparently easy to remove a large amount of fluid accumulation; it is easy and is done by aspirating. It is desirable to expand the lung where collapsed. X-Ray shows mediastinum pushed to the other side. The degree of dyspnea is considerable and the patient is depressed by the presence of the fluid. This constitutes indication for relief. It is not wise to take out 400 cc. of fluid and replace no air. Replacing a syringe full of fluid with a syringe full of air, we produce a condition of pneumo—instead of hydrothorax. Lateral pressure upon the auricles is considerably less from air than from fluid. A chest full of air is better than a pleural cavity full of fluid. We have had no catastrophies—nothing but gratifying results. In conditions of tuberculosis of the lung and pleural involvement there is danger of injuring the lung if we took out too much fluid. The replacement of air lessens the danger of taking out too much fluid. Today we can take out 400 cc. and it is perfectly safe. My opinion is based on experience of about two years. It is possible to empty the chest completely, as can be demonstrated by radiograms.

Dr. A. Henriques: Should like to ask if doctor has had any experience in multilocular empyema?

Dr. Danna (closing): One case I presented, showed three separate fluid levels. In these cardiac cases, especially, and malignancy cases where you get considerable compression and displacement of heart and lungs your patient's dyspnea is due not wholly to compression but to the actual weight of the fluid. Have removed four or five pints of fluid or even more from one side of chest. There is much weight on the diaphragm and that must weigh down the patient who already has a bad heart. Take that patient and remove 4 or 5 pints of fluid and replace fluid with air and the patient feels greatly relieved and better. Another point that we want to remember is this: One reason why water feels much less comfortable in the chest than air is that water is not elastic. You can take a hypodermic syringe and fill it with water and you cannot pull the piston ¼ of an inch. But you can pull it all the way if you let in a little air. The air you replace the fluid with is elastic; it is like having an elastic air bag in the chest instead of a rock.

CASE No. 9

Dr. A. Mattes.

The first case is interesting as far as the etiology is concerned. A colored female, aged 38, came to the United States from Central America 14 years ago. Her history is clearly negative as bearing on her present condition. She was seen six or eight months ago in the clinic with a low grade cystitis. Improvement in several weeks led to her discharge. Only bladder instillations were used. She returned to the clinic with indefinite symptoms, to which little attention was paid. About three or four months later I saw her in the ward. She had been admitted with the diagnosis of possible calculous hematuria. I cystoscoped her finding a marked grade of cystitis with pus covering the entire mucosa. Pyelograms and uretograms were negative for any pathology. She was placed on bladder instillations and again cystoscoped in four days. The bladder was very tolerant and showed a number of lesions above the ureteral orifices, laterally, in the fundus, and in the vault. They were not tubercular, but were granulomatous ulcerations and papillary hypertrophic leisons. The condition is clearing with tartar emetic intravenously. Her symptoms date back two to three years. I have been unable to find any ova. The diagnosis to my mind is plainly and clearly that of Bilharziasis, the patient having responded so promptly to tartar emetic medication.

Dr. F. M. John: Did you find ova in the feces? I should like to make a suggestion. The lesion is low in the rectum and often does not mix with the stool at all. If the feces is carefully washed and the water quickly centrifuged, the ova can be found. In the urine they develop so rapidly that they are hard to find.

Dr. Mattes (closing): One stool examination was reported negative by the laboratory.

CASE No. 10.

By Dr. A. Mattes and E. L. Leckert.

A white male patient, age 23, came into the hospital April 28th with the probable diagnosis of appendicitis. At that time he had a leucocyte count of 17,000, with 92% differential, and pain in the right side of the abdomen. No operation was performed, due to the fact that the pain was more lateral than it should have been. No mass

was palpable. There was nothing to indicate that it was anything but appendicitis. However the surgeon did not operate because of the character of the pain and the apparent well being of the patient. The temperature which was 104 began to drop to normal, and then go up and down till the day of operation. The urine at onset showed a few pus cells. Cystoscopic study and X-ray pictures showed clubbing of the calyces of both kidneys, with bilateral retention, in the form of stasis in the renal pelves. This coupled with tenderness, suggested the diagnosis of a peri-nephritic condition. Heat was applied to the side, for some cases do resolve, for several days with no results. The persistence of pain, a septic temperature after 8 to 10 days prompted intervention. An Edebold's incision carried to the renal fatty pad under local anesthesia failed to show any pus. Aspiration was negative. However, the surgeon was courageous enough to seek with his finger and was amply rewarded with pus so thick that it could be removed with the hands. This perinephritic abscess most probably arose from a cortical abscess of the kidney. The diagnosis should not be delayed till the abscess becomes apparent several days before the death of the patient; or after weeks of suffering, but should be performed early, as in this case, before the palpable mass developed, and before the X-ray could give any information. The patient is here, in apparent good health to attest to the prompt recovery following early drainage. His appendix was not molested.

CASE No. 11.

By Dr. J. Birney Guthrie.

This woman I showed about one month ago at the Medical Section as a diabetic problem. She had been admitted about 10 days before this with blood sugar of about 300 mg. per 100 cc. She had sugar in the urine. There was a marked neuritis. Polyuria was most troublesome associated with vulvar pruritis. We gave insulin from the beginning of treatment reducing the blood sugar to about 200. She was kept on the same diet, CH 52, P 32, F. 66, and we reduced the insulin gradually. In reducing to 200 she had a very severe insulin reaction. This was sufficiently severe to require subcutaneous injections. For several days these reactions occurred at about 208 mg., and the situation seemed a difficult one to get her down to a lower figure. I have contended that a patient who reacts at 200 is still a diabetic. In the method we use, after 48 hours, urinary sugar is no more and cannot be used as a further criterion of treatment. The blood sugar is our only possible guide.

My thesis is "The re-education of the tissue cells to a new state of living by re-establishing normal blood sugar levels." We re-educate the morphine habituate by gradual withdrawal. There are men—and I believe and know of a number of well known clinicians in this country—who are satisfied to stop in the further reduction of blood sugar on encountering insulin shock. They say, "This is the status in which this patient must live." There they leave the patient. I do not feel that we have done our duty at all to the patient who has had hyperglycemia until we try to bring it down.

We proceeded in this case with the help of Dr. Winters, gradually to withdraw the orange juice, which was supplemental to our standard diet. My custom is to put the patient on a fixed diet and give sufficient orange juice to overcome mild *reactions*, and gradually take away the orange juice. That our plan here has been successful is evidenced in numbers of cases. In four weeks of treatment we are able to have her now in entire comfort with blood sugar level of 110. With the co-operation of the patient, we have been able to re-educate her. She had become accustomed to living in sugar medium. We have reduced this level away and re-educated her cells into normal life. Re-education of the tissue cells, especially the central nervous system is what we should keep in mind. We have occasional failures where the temperamental nature of the patient keeps her from taking the risk; they hear of the dangers and are afraid to take the risk. This woman at one time made up her mind to go home; the insulin shock was too much and it required much tact and perseverence on the part of Dr. Winters to keep her here to pursue the treatment further.

DISCUSSION.

Dr. R. H. Turner: I did not understand Dr. Guthrie in point of 200 blood sugar; was it during shock?

Dr. J. A. Danna: Does that mean to say that the blood sugar in this case of 200 is normal; can they get their patients at a level of 200 and keep them comfortable and well more easily than you keep her at a level of 100 or 120? Is she more dangerous in this condition than if you let her stay around 200?

Dr. Guthrie (closing): We gave this woman over 60 units at one time; she has acquired considerable tolerance; today she gets 15 units of insulin and endures well a blood sugar of 110. All blood sugar records I am referring to are morning fasting figures. I have no doubt the blood sugars during the insulin shock were lower. I feel this woman is in a very much better condition than if we had yielded to fear and stopped where the first reaction occurred. The neuritis is responding to treatment and so long as she gets her insulin and keeps her diet this improvement will continue. If we give up this type of patient and leave her and other diabetics around 200 mg. we

are giving up the fight. We are abandoning her to her disease. I know of quite a number of diabetics who have blood sugar over 200 and are going on with degeneration and are a menace to life and a disturbance to happiness. We have to make a fight for these people. It takes courage and cooperation. We have to get the patient up to the point where they are certain to go through with the whole treatment. Dr. Giles believes recurrence of reaction is beneficial to the patient. I feel that we want to avoid the reaction, but, if it does happen, we must meet it by gradually re-educating the tissue to a new habit of living.

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE.

Examination of candidates for entrance into the Regular Corps of the U. S. Public Health Service will be held at the following named places on the dates specified:

At Washington, D. C.	Dec. 6, 1926
At Chicago, Ill.	Dec. 6, 1926
At New Orleans, La.	Dec. 6, 1926
At San Francisco, Cal.	Dec. 6, 1926

Candidates must be not less than twenty-three nor more than thirty-two years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily, oral, written, and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the President, with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

MEDICAL INTERNE (PSYCHIATRIC).

Applications for medical interne (psychiatric) will be rated as received until December 30. The examination is to fill vacancies in St. Elizabeth's Hospital, Washington, D. C., at $1,860 a year, and vacancies in positions requiring similar qualifications at this or higher or lower salaries.

The duties, under immediate supervision, are to admit patients, take histories, make physical and mental examinations and record findings; to make ward rounds of inspection, note charts, record observations; to prescribe for minor ailments or for acute or emergency cases and to dispense medicine in emergency; to perform minor surgical operations and to assist at major operations and in redressing; to administer anesthetics; to make routine laboratory tests and analysis; to assist at out-patient clinics in dressing and in administering vaccines; to keep records, make up case histories, answer correspondence relating to patients, and compile statistics requiring medical training, and perform related duties as required.

Competitors will not be required to report for examination at any place, but will be rated on their education, training and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil-service examiners at the postoffice or customhouse in any city.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

DR. FISHBEIN'S VISIT.

Some itinerary changes having been made in the speaking tour of Dr. Morris Fishbein, Editor of the Journal of the American Medical Association, we herewith give it to you as at present arranged.

Monday, December 6th—

Shreveport, 4:00 P. M.—"Fads and Quackery," (Doctors only).

8:00 P. M.—(General Public).

Tuesday, December 7th—

Monroe, 11:00 A. M.—"Business Ethics and Medical Ethics."

Wednesday, December 8th—

Alexandria, 8:00 P. M.

Thursday, December 9th—

Lake Charles, 10:00 A. M.

Lafayette, 8:00 P. M.—"Business Ethics and Medical Ethics."

Friday, December 10th—

Baton Rouge, 10.00 A. M.—(Doctors of Covington and District invited).

New Orleans, 8:00 P. M.—(General Public invited.) "Twenty-five Years of Medical Progress."

REGULAR SEMI-ANNUAL MEETING OF THE FOURTH DISTRICT MEDICAL SOCIETY.

Shreveport, Louisiana, October 5th, 1926, at Inn Hotel.

Scientific program:

2:00 P. M. Called to order by the President, Dr. W. B. Hunter.

Welcome doctors, Dr. A. P. Crain, President, Shreveport Medical Society.

"The Early Diagnosis of Extra Uterine Pregnancy," by Dr. Leroy Scott, Shreveport, La.

"An Unusual Case of Perforating Ulcer of the Stomach," by Dr. J. M. Gorton, Shreveport, La.

"Fever in Early Life," by Dr. Robert T. Lucas, Shreveport, La.

"Two Unusual Cases in Urology," Dr. J. R. Stamper, Shreveport, La.

Dinner, Inn Hotel, at 7:30 P. M.

"The Important Surgical Goiter," Dr. Jos. E. Heard, Shreveport, La.

"Femoral and Oblique Inguinal Hernia," by Dr. Thomas Ragan, Shreveport, La.

"Mastoid Surgery," by Dr. John L. Scales, Shreveport, La.

"The Value of Otology in Relation to Diagnosis and Location if Brain Lesions," by Dr. L. W. Gorton, Shreveport, La.

Election of Officers.

Officers elected for 1927:

President, Dr. John L. Scales, Shreveport.

Vice-President, Dr. M. M. Collins, Houston; Dr. R. T. Lucas, Shreveport.

Secretary-Treasurer, Dr. Leroy Scott, Shreveport.

MONTHLY BULLETIN SHREVEPORT MEDICAL SOCIETY.

October, 1926.

Minutes of the Meeting, September 7, 1926.

The regular monthly meeting of the Shreveport Medical Society was called to order at 8:30 P. M. by President Crain at the Pines Sanitorium, with twenty-five members present and five visitors: Drs. M. S. LeDoux, E. A. Schmidt, Messrs. Geo. Freeman, Paul Abramson and Ernest Weinfield. Since there was no August meeting, minutes of the July meeting were read and adopted. The Secretary read a letter from Dr. Gessner to Dr. S. C. Barrow, Councilor of the Fourth District, relative to a visit of Dr. Fishbein in the interest of organized medicine, also a communication from the Medical Economics relative to an advertising campaign in the daily press on health matters. Also a card of thanks from the family of Dr. Helen E. Hinton for the floral offering sent by the Society.

REPORT OF COMMITTEES.

Dr. Barrow reported that favorable action had been taken by the Committee on the application of Dr. M. S. LeDoux.

SCIENTIFIC PROGRAM.

Dr. Boyce gave us a "Few Touches on Endocrinology," reporting a series of cases under his observation. His paper was quite interesting, and was discussed rather freely by Drs. Knighton, Ragan, Lucas, and Boyce in closing. Dr. Gowen had a very good display of X-ray plates of Tubercular chests taken before and after treatment at the Pines, together with clinical history and progress. Discussion by Drs. Ragan, Butler, Knighton, Barrow and Gilmer, who gave an abstract of an article in the Southern Medical Journal on the decline of Tuberculosis.

CLINICAL CASES.

Dr. Butler exhibited two interesting gross specimens of tubercular heart, also one of a ruptured aortic aneurism into the peri-cardium of a boy seven years old.

NEW BUSINESS.

Dr. Knighton made a motion that the application of Dr. M. S. LeDoux be accepted which was carried unanimously. Dr. Barrow called further attention to a letter regarding Dr. Fishbein. After some discussion, Dr. Lucas moved that the matter be left to the committee on public meeting, held over from last year, Dr. Knighton, Chairman. It was moved and seconded that the letter from the Medical Economics be left to the Committee on Legislation and Public Health.

Dr. Barrow, as Councilor for the Fourth District, called the attention of the Society to the next meeting of the Fourth District, and made a motion that it take the place of our October meeting and that the Shreveport Medical Society furnish a good dinner to the Fourth District Society, the details of which to be left to our Entertainment Committee, composed of Drs. Lucas, Sanderson and Adair.

The President instructed the Secretary to notify the Memorial Committee concerning the death of Dr. Hinton in order that proper resolutions might be adopted.

Dr. Abramson gave the Society a short address of welcome to the Pines, as well as an invitation to come again.

There being no further business, the Society adjourned at 10:30 P. M. after which refreshments were served in the main dining room compliments from the management, and needless to say, were enjoyed by all.

W. R. HARWELL, Secretary.

Dr. Oscar Dowling, President of the Louisiana State Board of Health, after a sojourn of three months at Ancon, Colon and Panama in the Canal Zone, returned to New Orleans October 15th. Dr. Dowling, always interested in the welfare of the New Orleans Medical and Surgical Journal, gave the periodical such publicity while in the Zone that there may be a combination of the medical societies of the Zone and those of our own State, that will be of interest and profit to both. Dr. Dowling was good enough to send us a letter which we take pleasure in publishing.

EAST BATON ROUGE MEDICAL SOCIETY.

The regular meeting of the East Baton Rouge Medical Society was held at the Istrouma Hotel with the following members present:

Drs. Cecil and Lionel Lorio, J. A. Tucker, Rufus Jackson, F. O. Darbey, J. M. Adams, W. A. Pipes, S. D. Porter, W. R. Edison, and C. A. Weiss.

The following papers were read and freely discussed:

Preliminary report on the use of dilute hydrochloric acid in the treatment of high blood pressure, by Dr. J. A. Tucker.

Intestinal parasites, by Dr. W. A. Pipes.

Report and presentation of case of Hodgkins disease in boy ten years of age, Dr. Cecil Lorio.

It was decided to postpone the date of the fall meeting of the Sixth District Medical Society from November to December to make the date coincide with the date of the contemplated visit of Dr. Morris Fishbein to this section.

Meeting then adjourned.

The regular meeting of the New Orleans Gynecological and Obstetrical Society was held Thursday, October 14, at 8 P. M., at the Baptist Hospital on Napoleon Avenue. Meetings this year will be held at intervals of two months, instead of once a month as heretofore.

1. The importance of careful examination before and thorough exploration at the time of operation, Dr. P. B. Salatich.

2. A case of repeated tubal pregnancy on the right, followed by normal pregnancy, all within 10 months, Dr. A. H. Gladden, Jr.

3. Dr. Joseph Hume (by invitation) read a paper before the Society.

4. Obstetrics and gynecology in the clinics of Scandinavia, Dr. C. Jeff Miller.

DIED: Dr. Charles S. Mercier, one of the oldest practicing physicians in New Orleans, on September 24, 1926. He was 72 years old. Dr. Armand Mercier, the father of Dr. Mercier, was learned in medical lore and was an outstanding figure in the city during his lifetime. Dr. Mercier is survived by his widow; three daughters, Adele, Aida and Aline; a son, Armand; a sister, Mrs. Jeanne White; and a brother, Evans Mercier.

Dr. Mercier, venerable, kindly and philosophical, was known not only for his many charitable deeds but also for his knowledge of scientific matters and his love for the arts and literature.

Dr. E. Denegre Martin, Dean of the Graduate School of Medicine, has recently returned from Chicago where he had occasion to discuss matters regarding the Graduate School with the members

of the Council on Medical Education of the A. M. A., who expressed themselves as being more than pleased with the splendid work being done here for the profession of the South.

Dr. A. K. Duncan, of the Graduate School of Medicine, addressed the meeting of the St. Tammany Parish Medical Society at Mandeville, La., on Friday, October 8th, 1926, at eight P. M., the subject of the lecture being "Some Phases in Clinical Diagnosis."

Dr. A. L. Levin, of the Graduate School of Medicine, lectured to the members of the Washington Parish Medical Society, Thursday, October 28th, 1926, on "Practical Points in the Diagnosis and Treatment of Gastro-Intestinal Diseases."

Dr. R. H. Clark, recently of Charity Hospital, has now associated in practice with Dr. T. T. Batson of Hattiesburg, Mississippi.

AN AID TO THE MEDICAL PRACTITIONER.

Physicians treating venereal disease cases have frequently expressed a need for a pamphlet containing instructions and advice to be given to venereal disease patients. Due to the nature of these diseases and the regimen which proper treatment requires, the need for such a publication has long been apparent. Some time ago the U. S. Public Health Service prepared a pamphlet known as "Important Confidential Information," expressly for this purpose. The leaflet is in two parts, one dealing with Gonorrhea and the other with Syphilis. Advice is given among other points on the following: Importance of continuing treatment until cured, proper diet while under treatment, proper care to prevent the spread of the disease, the futility and danger of quacks and self-treatment, sex conduct and marriage.

Many physicians have found this publication a valuable aid in securing the co-operation of the patient while under treatment and also as an aid in holding the patient until cured or rendered non-infectious. Copies of this publication are available from most State Departments of Health or they may be secured by writing to the U. S. Public Health Service, Washington, D. C.

NEW NEGRO HOSPITAL FOR NEW ORLEANS

The negro residents of New Orleans have started a campaign for the purpose of raising, among themselves, sufficient funds for the construction of the three-story hospital which will have a staff of negro physicians and nurses to serve their race. Such a hospital is certainly needed here and we trust the necessary funds will soon be forthcoming. Already they have raised $12,000 for the purpose.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor.

THE WALTER REED COMMISSION.

The Medical Society of Virginia has established a Commission "to raise a fund, a part of which will be used to purchase the Walter Reed home in Gloucester county, Virginia, his birthplace. This can be purchased and put in repair for $1,500.00. The remainder of the fund will go to establish the Walter Reed Chair for research work at the University of Virginia, as a memorial to him."

President T. E. Ross, of the Mississippi State Medical Association, has appointed the following commission to co-operate in this most worthy movement:

George Baskerville, Greenwood; L. C. Feemster, Tupelo; V. B. Philpot, Houston; L. L. Lippincott, Vicksburg; W. W. Smithson, Jackson; W. W. Crawford, Hattiesburg; J. W. Gray, Clarksdale; H. L. Rush, Meridian; J. C. McNair, Natchez; T. Borum, Corinth.

It was announced that the bonds for the new Insane Hospital would be marketed early in October.

Plans are under way for a $250,000 brick fireproof hospital building for Biloxi which will be four stories and contain room for 100 beds and additional quarters for 100 more. The building now being used will be moved back and used for a nurses' quarters. A special maternity department will be a feature. There also will be a complete X-ray and laboratory departments, and separate wing for negroes.

The bi-monthly meeting of the East Mississippi Medical Society was held at Philadelphia Thursday evening, Octoober 7, at 7 o'clock. The program was as follows:

"The Importance of Early Diagnosis of Tuberculosis," Dr. T. D. Bordeaux.

"Diagnosis and Treatment of Diseases of Antrum," Dr. G. W. Bounds.

"Treatment of Scarlet Fever with Streptococcus Antitoxin," Dr. F. G. Riley.

Through the efforts of Dr. Lowry Rush, secretary of the society, the Gulf, Mobile & Northern railroad operated a special train to Philadelphia before the meeting.

Dr. R. B. Austin, of Sebastopol, Mississippi, died on September 10, 1926. He was in active practice in the vicinity of Sebastopol for nearly forty-seven years. In his death the community has lost one of its best citizens and one of its most efficient physicians.

Dr. J. L. Parks, of Harperville, has moved to Pelahatchee, Mississippi.

Dr. J. A. King has moved to Rome, Mississippi, where he will be in active practice.

Dr. J. A. Neill, of Forest, Mississippi, spent his vacation, during the month of September, in Miami, Florida, and Waldo, Arkansas.

The Central Medical Society met on the 21st of September with a good attendance. Dr. R. W. Hall, the secretary, and Dr. George Adkins were absent on account of court where they were witnesses in behalf of Dr. J. H. Rush, of Meridian.

Dr. F. E. Rehfeldt is back at his office after undergoing a tonsillectomy.

The Central Medical Society will be well represented at the Southern Medical Meeting in Atlanta.

Dr. Boyken, Superintendent at the Charity Hospital, Jackson, announced that he would close that institution for the next few months on account of a shortage of funds.

Dr. W. W. Diamond, who has been with the State Hospital for several months, has entered general practice in Jackson.

Dr. David Walley, who has been Superintendent of the State Hospital at Jackson, has located in Jackson to practice surgery.

The Tri-County Medical Society met in Brookhaven as guests of the Brookhaven doctors at luncheon at the King's Daughter's Hospital. The following program was rendered: "Prostatectomy," L. D. Dickerson; "Whooping Cough," J. C. White; "Local Infection," H. R. Fairfax.

Dr. W. C. Carraway of Forest, Mississippi, has recently returned from Hot Springs, Arkansas.

Dr. Flint Harralson, now of the Public Health Service of New York City, visited his old home in Forest during the month of September.

On October 12th, at Vicksburg, the doctors from Sharkey, Claiborne, and Issaquena met with

the Warren Medical Society to discuss the union of these four counties into one society.

The Tate Medical Society is considering joining the North Mississippi Six-County Society.

The Health Officer of Tate County reports much interest lately in inoculation against typhoid and against diphtheria.

The Tate County Medical Society announces that its next meeting will be held at Coldwater on the night of the second Tuesday of November.

The Editor of this column wishes to take this occasion to state that the efforts of the various County Society reporters have given him much to be thankful for, and in return he hopes that they will have a good Thanksgiving and that they will be able to enjoy it.

The Homochitto Valley Medical Society at the regular meeting at Natchez, October 7, elected the following officers for 1927:

President—Dr. J. W. Brumfield, Gloster, Miss.

Vice-Presidents — Adams County, Dr. J. D. Shields, Pine Ridge, Miss.; Amite county, Dr. W. J. Grady, Stephenson, Miss.; Franklin county, Dr. J. W. Walker, Meadville, Miss.; Wilkinson county, Dr. R. J. Fields, Fayette, Miss.

Secretary-Treasurer—Dr. L. S. Gaudet, Natchez, Miss.

Delegates and Alternates—Adams, Dr. E. E. Benoist, Dr. M. Beekman; Amite, Dr. W. R. Brumfield, Dr. J. E. Hemitt; Franklin, Dr. C. E. Mullen, Dr. L. W. Walker; Jefferson, Dr. J. C. McNair, Dr. B. R. Clark; Wilkinson, Dr. C. E. Cathings, Dr. J. R. Fields.

Board of Censors—Dr. L. H. Lamkin, Dr. J. S. Ullman, Dr. J. C. McNair.

Medical Defense—Dr. W. H. Aikman.

The next meeting of the Homochitto Valley Medical Society will be January 13, 1927.

Dr. J. S. Ullman, Natchez, read a paper on "Carcinoma of the Cervix Uteri" before the Jefferson County Medical Society at Birmingham, Alabama, October 4.

The Greene County Board of Supervisors at Leaksville by unanimous vote arranged an $8,000 budget for a full-time county health department to begin January 1, 1927.

The North Mississippi Medical Society met at Aberdeen on Tuesday, September 31st. A splendid scientific program was rendered during the day, followed by a banquet at 7 o'clock in the evening, at which time one of the most delightful social entertainments in the history of the society was given, which included esthetic dancing, readings, and speeches.

As we go to press, the Annual Health Officers' Conference announces the following program to be given in Jackson, October 21 and 22:

1.. The Role of Municipal Sanitary Surveys in the Program of a County Health Department.
Dr. C. St. C. Guild, Tupelo

2. Shellfish Sanitation.
H. A. Kroeze, Jackson

3. The Feasibility of an Intensive Excreta Disposal Campaign in Municipalities.
J. M. Kittrel, Laurel

4. The Public Health Office and Office Display Material as an Aid to Public Health Education.
C. P. Coogle, Greenwood

5. The Value of Newspaper Publicity to a Health Program.
Sylvan Myers, Vicksburg

6. Round Table Discussion on Medical Examination of School Children.

7. The Foundation of Sound Teeth.
W. R. Wright, Jackson

8. The Relationship between the Central Organization and County Health Departments and between the Health Officer and the Physician.
Felix J. Underwood, Jackson

9. Whole Time County Health Work.
Surgeon L. L. Lumsden, U. S., Public Health Service, Washington, D. C.

10. An Addres.
A. T. McCormick, State Board of Health, Louisville, Ky.

11. The Role of the Preventorium in an Anti-Tuberculosis Campaign.
Mrs. R. S. Phifer, Jackson.

12. An Outline of Anti-Tuberculosis Measures Suitable for Incorporation in a General Health Program.
Henry Boswell, Sanatorium

13. A Practical All the Year Program for a County Health Department.
J. B. Black, Jackson

14. The Role of the State Epidemiologist in the Control of Communicable Diseases.
Hardie R. Hays, Jackson

15. **Financing County Health Departments.**
Dan J. Williams, Gulfport

Dr. John McMullen, Medical Director of the Southern Area of the United States Public Health Service, was a visitor to Hattiesburg and Laurel on the 8th and 9th of September.

He was the guest of the South Mississippi Medical Society which met in Laurel on the 9th and addressed the Society.

Whereas, God in his wisdom has taken from among us two of our most useful and beloved physicians, Doctors S. S. Turner and J. D. Donald,

Be it resolved, by the South Mississippi Medical Society, in meeting assembled:

1st. That we have lost two of our most useful members and the public two of its greatest and most unselfish servants.

2nd. That we feel keenly the loss of these two friends and professional brothers and extend to their families our profound and heartfelt sympathy.

3rd. That we commend the lives of these two men to the young manhood of our commonwealth. They were honorable, ethical, unselfish, devoted to their families, to their patients, to their country, and to their God. They rendered service willingly to the needy regardless of financial return and, no doubt, by their continuous and earnest work cut short their years and deprived themselves of a happy old age.

4th. That a copy of these resolutions be mailed to each of the families, be spread upon the minutes of the meeting, and be published in the Hattiesburg American.

C. E. HIGHTOWER,
W. D. BEACHAM, Committee.

RESOLUTIONS

On the Death of Dr. D. C. Warren of Union Church, Mississippi.

Adopted by the Homochitto Valley Medical Society at its regular meeting, October 7, 1926.

Whereas, this Society has lost one of its oldest and best members by the recent death of Dr. D. C. Warren, of Union Church, Mississippi; and,

Whereas, we feel most keenly the loss of his valued wisdom and counsel in our meetings, therefore, be it

Resolved, that we hereby express our deepest and most heartfelt sympathy to the bereaved family; and be it further

Resolved, that a copy of these resolutions be spread on our minutes and be published in the New Orleans Medical and Surgical Journal.

PHILIP BEEKMAN, M. D., Chairman.
J. W. DICKS, M. D.
J. S. ULLMAN, M. D.

Mrs. Mattie Leahy, Red Cross Nurse, Natchez, Mississippi, will devote her entire time during the coming year as school nurse to the public and parochial schools.

BOOK REVIEWS

Ophthalmic Neuro-myology: By G. C. Savage, M: D., L.L. D. 2d ed. Pub. by Author. 1926.

Popular medical writers and speakers are expected to extract their effusions largely from the memoirs of the King of Bunk, the Prince of Impracticality, and the Duke of Ambiguity. As with George Ade's school chairman who left his carefully prepared, set, and censored speech in his other suit and at the critical moment had to either sit down or tell the plain truth; a medical writer occasionally departs from tradition sufficiently to express his own ideas, in his own words, and in his own manner and usually says something worth while.

If you have attended many ophthalmic meetings, you have often seen a tall, sharp featured, elderly, gentleman dressed in a long coat. That is Dr. Savage. His hobby is the function of the extra-ocular muscles, about which he has thought long and hard.

Although my imagination is not able to picture his numerous cortical ocular motive centers hitting on all six and I believe that fewer technical terms would have made his many excellent ideas more easily understood by the large majority. We are indebted to him for having really expressed his knowledge in his own way. I have his book in my library partly because of its technical value and also as a remembrance of a doctor who has devoted much effort to the study of a definite subject, who has original ideas, and is not afraid to express them. Most of us are so accustomed to second hand ideas that we get mental colic at the mere thought of any thing else.

If the average medical writer would come down from his Sinai of Egotism long enough to discuss what he knows in a simple practical way and in concise understandable English, more patients would get well. It is so much easier and more profitable to rehash again the dear old ideas, soaked in mysticism, fried in uselessness and spiced with ambiguity; than to break with tradition and make getting well in the simplest and most practical way, our real excuse for consuming perfectly good paper and ink. Very few of us have the courage to expound the medical doctrines of frankness, simplicity, and practically to a befuddled profession and still more befuddled public.

In the last analysis, but few things really matter much. Books and doctors and theories and ideas will come and go forever. Dr. Savage has the advantage over most of us. He has really thought long and hard about a concerte medical problem and has expressed his ideas in his own way and in his own words. Who has done more?

CHAS. A. BAHN, M. D.

The Treatment of Fractures: By Chas. Locke Scudder, A. B., Ph. B., M. D., F. A. C. S. 10th ed. rev. Philadelphia & London, W. B. Saunders Co. 1926.

In this edition, new material has been added; several chapters have also been enlarged and revised. However, many "historically interesting methods"—long antiquated—are still described. By eliminating these and confining the text to the actually used methods of treatment, a more modern savor and greater practicability would result.

The preparation of special subject (pathological fractures, bone repair, fractures of the maxilla and mandiable, massage, anesthesia and anesthetics, and birth fractures) by men of experience and training greatly enhances the value of this work.

Emphasis is placed on the Carrel-Dakin treatment of compound fractures; the prevention of shock by skilled immediate treatment of fractures; the necessity for an X-ray of every fracture; the value of the early active movement of septic joints (Willem treatment); the necessity for the early active movement of joints contiguous to the fracture; the value of early active and passive movements of joints; the superiority of the Whitman method of treating fractures of the neck of the femur and the less promicuous use of metallic plates and sutures.

The chapter on Peripheral Nerve Injuries associated with Fractures is timely. The operative treatment of fractures is presented as a "system by itself apart from its application to any particular fracture."

Not enough stress is placed upon the use of plaster of Paris which is now universally recognized as superior to the time worn board splints.

This edition, like its many predecessors, maintaining its authoritative standard is of value both as a text for the student and as a reference to every "surgeon of traumatism."

PAUL J. LACROIX, M. D.

Birth Control and the State: By C. P. Blacker, M. C., M. A., M. R. C. S., L. R. C. P. New York, E. P. Dutton & Co. 1926.

This little book has been written by an English physician in anendeavor to appeal both to the general public and to the medical profession in

favor of the dissemination of contraceptive information by the Ministry of Health. The author takes up the various arguments against the practice of contraception, based on its alleged deleterious effects both on the individual and on the State, and attempts to refute them. He also considers the opposition to birth control on the part of the various religions, as well as the militaristic attitude of certain nations, which leads them to encourage overpopulation.

The chief contention advanced is that in many countries of the world, e. g., India and Japan, overpopulation is at present a real menace, especially as the increase is found almost exclusively in the more undesirable elements of the population. He recognizes the fact that increased fertility is much to be desired in the upper and middle classes. He argues that unrestricted increase in these already overcrowded countries may be one of the causes of a future world war, which might well be so devastating as to cause the collapse of western civilization.

The book is an interesting and well written discussion of this question, whether one is in favor of birth control or not. Its brevity and conciseness are especially commendable.

E. L. KING, M. D.

Edgar's Practice of Obstetrics: By J. Clifton Edgar, M. D. New York, P. Blakiston's Son & Co. 1926.

Systematically paragraphed; is well written in type and composition. The various subjects on obstetrics are discussed in details in proportion to their importance, and the more recent additions of therapeutic armanentarum are well emphasized.

The text has 684 illustrations, well depicting either histological representation or details in technical manipulation.

A. JACOB, M. D.

PUBLICATIONS RECEIVED.

D. Appleton & Company, New York & London: "Clinical Pediatrics" series, v. 1 "Prenatal Care," by Ralph W. Lobenstine, M. D. & Harold C. Bailey, M. D.; v. 2 "The Newborn, Physiology and Care," by Clifford G. Grulee, M. D. & Barnet E. Bonar, M. D.; vol. 3 "The Newborn, Diseases and Abnormalities," by Clifford G. Grulee, M. D. & Barnet E. Bonar, M. D.; v. 4 "Preventive Pediatrics," by Borden S. Veeder, M. D.; v. 5 "Disorders of the Nervous System in Childhood," by Bronson Crothers, M. D.

G. P. Putnam's Sons, New York & London: "The Human Body," by Marie Carmichael Stopes.

J. B. Lippincott Company, Philadelphia & London: "International Clinics," 36th series, v. 3.

Harvard University Press, Cambridge: "Principles of Medical Treatment," by George Cheever Shattuck, M. D.

Southern Surgical Association, Philadelphia: Transactions, v. 38. 1925.

REPRINTS.

"Case of Acute Mastoiditis with Late Babyrinthitis," "Acute Otitis Media and Uremia," "Case of Acute Otitis Media Accompanied with Paralysis of the Facial Nerve," "Some Physical Intra-Nasal Conditions Favoring Involvement of the Nasal Accessory Sinuses," by Myron Metzenbaum, M. D. "The Trigone of the Bladder as a Factor in Urinary Obstruction," by Frank Hinman, M. D. & Miley B. Wesson, M. D. "The Treatment of Roentgen-ray Nails," "Management of the Post Influenzal State," by Curran Pope, M. D. "Industrial Hernia Versus Seminal Vesiculitis and Vasitis," "The Importance of Buck's and Colles' Fasciae in Urinary Extravasation," "The Treatment of Traumatic Rupture of the Kidney," by Miley B. Wesson, M. D.